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## Original Articles

### THE COMPLEMENT FIXATION TEST IN THE DIAGNOSIS OF GONORRHEA \*

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#### DEFINITION, PRINCIPLES AND TECHNIC

An antigen or antibody generator is any substance whose introduction into the animal body leads to the production of antibodies or amboceptors as they are often called. A familiar example is the production of antitoxin (antibodies) in the blood of horses by the injection of diphtheria germs or toxin. The antibodies thus produced by natural (disease) or artificial infection are specific; that is, the diphtheria bacillus produces diphtheritic antibodies but does not produce antibodies of, say, the tetanus type. These antibodies, in general, are found only in animals infected or injected, as the case may be, with the corresponding antigen. Antibodies are thermostable; that is, they are not destroyed by heating to 56 C. for a half hour.

Complement, on the other hand, is a substance normally present in all blood-sera though varying greatly in strength and amount in different species and is thermolabile or destroyed by heating to 56 C. Serum whose complement has been thus removed is called inactivated serum. Any antigen has an affinity for its corresponding antibody and will combine with it in the presence of complement.

By complement fixation is meant the phenomenon which occurs when a serum containing antibodies is brought in contact with the corresponding antigen in the presence of free complement. When this occurs the complement present

is consumed in binding the antigen and antibody together, hence the terms "Complement Fixation," "Complement Deviation," or "Complement Binding." Complement, unfortunately, cannot be measured by any simple method and it is necessary to employ a biological procedure to determine whether or not it has been bound. The method used is known as an hemolytic system, and the following charts show the development and use of the method. Charts 1, 2 and 3 explain the method of preparing the material used in the hemolytic system, and it will be noted that this system is itself an antigen-antibody reaction where the red blood-cells as antigen lead to the production of antibodies in the injected rabbit. The antibodies thus produced are called hemolysins since they will hemolyze or dissolve a suspension of their corresponding cells, provided free complement is present.

In order to always have a uniform and exact amount of complement in our tests, we destroy by heat the complement normally present in the blood of the injected rabbit, and in the specimen of blood to be tested, and add a definite and predetermined amount from a guinea-pig. The reactions which occur when complement is present or absent are shown in Chart 4. Here again we see that antigen and antibody can combine only in the presence of free complement.

In the above explanations we have considered the sheep cells as antigen and the hemolysins as the antibodies produced by their injection. Now, remembering that an antigen is any body which generates amboceptors, let us consider the case of specific gonorrheal infections.

#### GONORRHEAL INFECTIONS

Here the gonococcus is the antigen and under proper conditions, to be discussed later, leads to the production of gonorrheal antibodies in the blood of an affected individual. If then, an antigen made from cultures of gonococci be brought in contact with serum containing gonor-

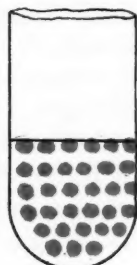
\*From the Research Department of the Detroit Clinical Laboratory.

rheal antibodies in the presence of complement, the two will combine and in so doing will use up the complement. Then when sheep's blood and hemolytic serum are later added there will be no hemolysis since there is no free complement left to complete the second combination of antigen (sheep cells) and antibody (hemolysins).

In case the serum does not contain any gonorrheal antibodies the complement is not consumed in carrying out the first combination of antigen (gonococci) and antibody (gonorrheal), and is therefore free to complete the union of antigen (sheep cells) and antibody (hemolysins). There is consequently an hemolysis of the sheep cells and the reaction is said to be negative.

SHEEPS BLOOD is defibrinated and the red corpuscles collected by centrifugalizing and washing with 0.95% NaCl several times to get rid of the serum.

These are represented in tubes, thus:-



and in equations by the symbol,



Every animal's serum contains complement.

Complement is represented in tubes, thus:



and in equations by the symbol,



The complement is very unstable and can be destroyed by heating the serum half an hour at 56°C.

Serum thus treated is called "inactivated serum".

Chart 1.

The reactions which occur in the case of positive and negative sera are illustrated in Charts 5 and 6.

The technic is essentially the same as that of the Wassermann test except that an antigen made from all strains of gonococci, "at large or in captivity on this continent," is used in place of the organ extract antigen of the Wassermann reaction. The antigen that we have employed was very kindly put at our disposal by Parke, Davis & Co., and we have found it eminently satisfactory as have other investigators who have employed it. Our hemolytic serum we obtained

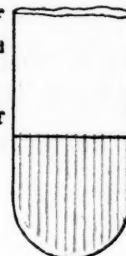
from the same firm using the sheep's cell system. I have purposely omitted the exact details of the method, which are of interest chiefly to the serologist. Known positive and negative bloods should always be run as controls and we have always made use of human sera for such as we have found that the commercial antigenococcus serum is not suitable since it is *per se* anti-complementary, that is, it tends to prevent hemolysis even when no antigen is present.

#### HISTORICAL

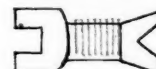
The method of complement fixation was developed by Bordet and Gengou in 1901, and has

If a rabbit is injected every 5 to 7 days for a month with increasing amounts of the washed sheep's cells, its serum becomes hemolytic for sheep corpuscles due to the production of hemolysins, also called amboceptors.

These amboceptors are represented thus:-



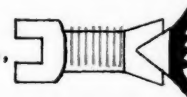
and by the symbol,



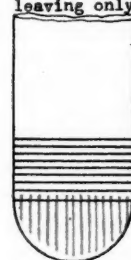
The serum also contains complement so the two together are represented thus:-



and by the combined symbols,



If the serum is heated, the complement is destroyed leaving only the amboceptors present, thus:-



plus heat at 56°C =

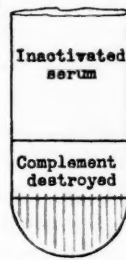


Chart 2.

been very extensively applied in the identification of various antigens and amboceptors. Wassermann and Brück<sup>1</sup> first employed the method in the detection of typhoid bacilli and antibodies in 1905, and in the following year Wassermann<sup>2</sup> in collaboration with Neisser and Brück proved the feasibility of detecting syphilis by this method, using a syphilitic organ extract as antigen. Muller and Oppenheim,<sup>3</sup> in 1906, were the

1. Wassermann and Brück: Med. Klin., 1905, 1, 1409.

2. Wassermann, Neisser and Brück: Deutsch. med. Wehnschr., 1906, xxxii, 745.

3. Müller and Oppenheim: Wien. klin. Wehnschr., 1906, xix, 894.

first investigators to apply the method in gonorrheal conditions. They obtained a positive reaction in one case of gonorrheal arthritis but failed to get positive results in several other cases clinically gonorrheal in nature. In the same year Brück<sup>4</sup> confirmed this work but succeeded in getting positive reactions in only five out of eight cases. Meakins,<sup>5</sup> in 1907, reported five cases with a positive result in four of them. In the same year Wollstein,<sup>6</sup> Vannod<sup>7</sup> and Teague and Torrey,<sup>8</sup> published the results of their clinical and experimental studies.

If then we take

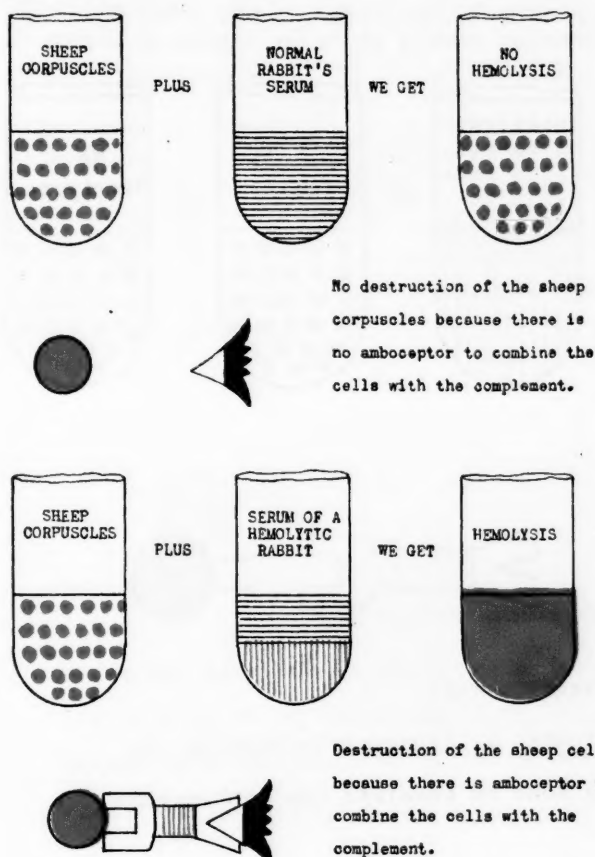


Chart 3.

The work of Teague and Torrey<sup>8</sup> was especially enlightening as they showed that different strains of gonococci differed greatly in their ability to fix complement in the presence of different specimens of gonorrheal serum. Thus strain "A" readily fixed complement in the presence of serum from an animal injected with this strain, but had little or no power of so doing in the presence of serum from an animal injected with some other strain. They therefore advocated

testing a blood against as many separate strains as possible. While thus explaining the many negative results obtained by earlier workers the separate testing of bloods against many strains of gonococci would render the test far too cumbersome for clinical work.

The next great advance in the application of complement fixation to the diagnosis of gonorrheal conditions we owe to Schwartz and McNeil<sup>9</sup> who proved:

1. That if only one strain of gonococci were used in making the antigen many positive sera would not react.

A guinea pig is killed and from its blood the serum is collected. Guinea pig serum is used because it contains more complement with less variations in quantity than the serum of other animals.

Now, if we take

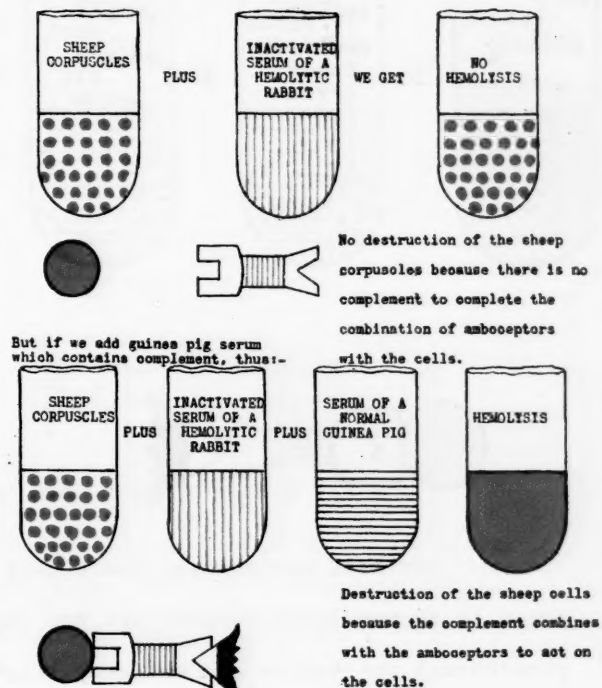


Chart 4.

2. That an antigen made from many strains will fix complement where a single strain antigen does not.

3. That such a polyvalent antigen will fix complement whenever any of its component strains do so.

It has been found that an antigen made from ten to twelve strains will serve all practical clinical purposes. Gradwohl<sup>10</sup> mentions the case of a man who contracted gonorrhea in Ceylon and whose blood gave a strongly positive reaction when tested against the "home grown" antigen. As mentioned above, the failure of the earlier workers to get positive results in cases which should have given them was due to the use of a single strain antigen.

9. Schwartz and McNeil: *Am. Jour. Med. Sc.*, 1911, cxli, 693.

10. Gradwohl: *Am. Jour. Derm. and Gen.-Urin Dis.*, June, 1912, 294.

4. Brück: *Deutsch. med. Wchnschr.*, 1906, xxxii, 945.  
5. Meakins: *Bull. Johns Hopkins Hosp.*, 1907, xviii, 255.  
6. Wollstein: *Jour. Exper. Med.*, 1907, ix, 588.  
7. Vannod: *Centralbl. f. Bakteriöl.*, 1907, xlv, 10 and 110.  
8. Teague and Torrey: *Jour. Med. Research*, 1907, xvii, 223.



Since their first paper Schwartz and McNeil<sup>9</sup> have published two additional communications, one<sup>11</sup> referring to the use of the test in arthritic conditions, and the second<sup>12</sup> reporting the results of their work to date. Additional reports by Swinburne<sup>13</sup> whose laboratory tests were performed by Schwartz and McNeil, Schmidt,<sup>14</sup> Keyes,<sup>15</sup> Smith,<sup>16</sup> O'Neil,<sup>17</sup> Gardner and Clowes,<sup>18</sup> Rockwood<sup>19</sup> and Gradwohl<sup>10</sup> have but served to emphasize the clinical value of this test, whose results are fully as accurate as those of the Wassermann reaction and in many respects more so.

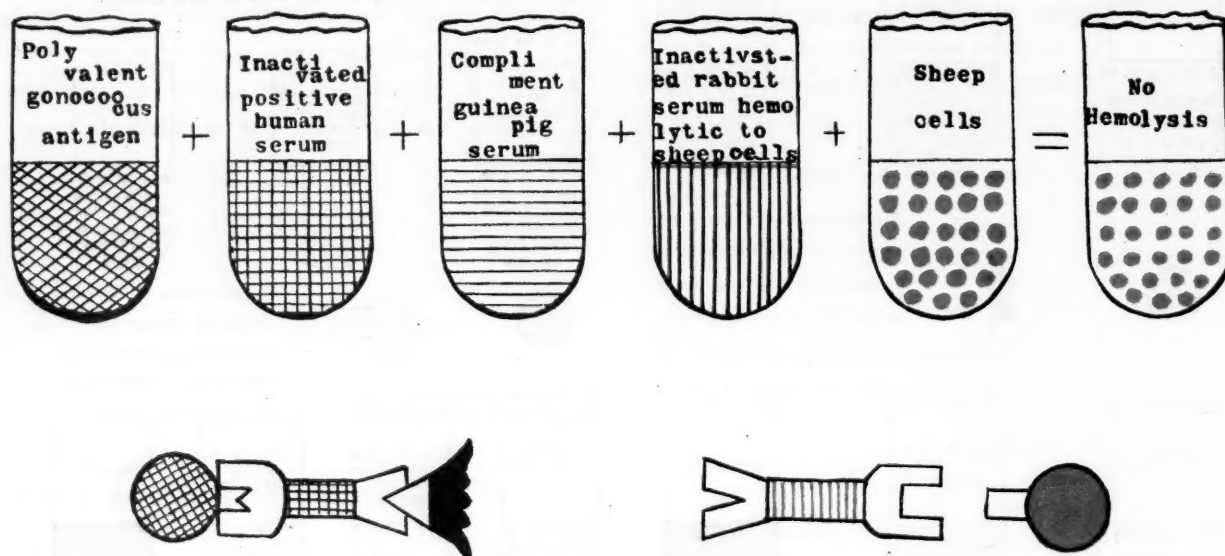
#### VALUE OF POSITIVE AND NEGATIVE REACTIONS

The reaction is absolutely specific for gonorrhea. A good positive reaction has never been

low: "A positive reaction denotes the presence or recent activity in the body of a focus of living gonococci."

Since, however, the reaction is dependent on the presence of gonorrheal antibodies, a positive reaction cannot be expected until sufficient time has elapsed for their development. In general, a period of from three to four weeks, after the appearance of the discharge, must elapse before the test becomes positive. Certain cases undoubtedly become positive even earlier, but the above represents the average period of development of a positive reaction.

Cases which remain strictly localized in the anterior urethra or in the vagina of women do



POSITIVE GONORRHOEAL COMPLEMENT FIXATION TEST.

There is no hemolysis because all the complement is consumed in binding the gonorrhoeal antibodies and antigen, leaving none to complete the combination for destruction of the sheep cells.

Chart 5.

found in a non-gonorrheal subject. Flexner's meningitis serum will give positive reactions according to Schwartz and McNeil, but when the reaction was carried out with specimens of blood from meningitis cases uniformly negative results were obtained.

The significance of a positive reaction has been well expressed by Schwartz and McNeil as fol-

low: "A positive reaction denotes the presence or recent activity in the body of a focus of living gonococci." Evidently then some involvement of the deeper structures is necessary to the development of the antibodies concerned. Except in the case of vulvovaginitis in children, after three or four weeks, practically all cases have some involvement of the deeper structures with the production of a positive reaction.

It must be borne in mind that a negative reaction does not have the same value as a positive one. This fact has also been fully demonstrated in the case of the Wassermann reaction. As compared with the Wassermann, however, more emphasis can be placed on a negative gonorrheal reaction since there is none of the fibrous tissue production in gonorrhea which characterizes syphilis, and which tends to wall off affected areas

11. Schwartz and McNeil: Am. Jour. Med. Sc., 1912, cxliv, 369.

12. Schwartz and McNeil: Am. Jour. Med. Sc., 1912, cxliv, 815.

13. Swinburne: Tr. Am. Urolog. Assn., 1911, v, 21.

14. Schmidt: Tr. Am. Urolog. Assn., 1911, v, 30.

15. Keyes: Tr. Am. Urolog. Assn., 1911, v, 37.

16. Smith: Lancet-Clinic, 1912, cviii, 124.

17. O'Neil: Boston Med. and Surg. Jour., 1912, clxvii, 464.

18. Gardner and Clowes: New York Med. Jour., 1912, xcvi, 734.

19. Rockwood: Cleveland Med. Jour., 1913, xii, 1.



with a lessened toxin production and consequent decrease or absence of antibody production.

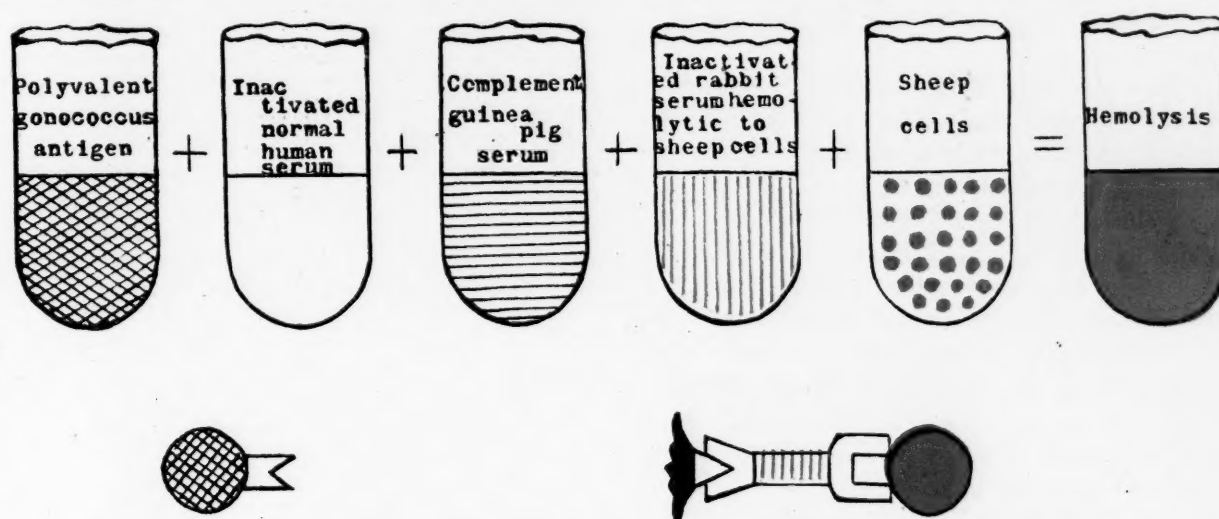
A single injection of salvarsan, or a short course of mercury can temporarily convert a positive Wassermann into a negative one, but in gonorrhea, on the other hand, once a positive reaction has developed it tends to persist as long as any living gonococci exist in the body.

Torrey<sup>20</sup> has shown in experimental animals that antibodies are eliminated very rapidly, there being an appreciable decrease within ten days, with practically complete elimination in fifty. Clinically cured cases of gonorrhea usually become negative in five to eight weeks after treat-

ment was entirely eliminated and that what remained was simply a non-gonorrheal mucous discharge.

#### COMPLEMENT FIXATION VERSUS STAINING AND CULTURAL METHODS

In the acute stages of the disease the demonstration of the organism by stain and culture is comparatively easy. Their detection in chronic cases is at all times difficult and often impossible. This applies particularly to women where the luxuriant flora of the genital tract completely masks the few gonococci which may be present. Then too, many women object strenuously to the



#### NEGATIVE GONORRHOEAL COMPLEMENT FIXATION TEST.

In normal human serum there are no gonorrhoeal antibodies to bind the guinea pig complement to the antigen, so the complement is free to complete the second combination, that of the sheep cells and hemolytic serum, with a resulting hemolysis of the cells.

Chart 6.

ment has been stopped, provided, of course, that no organisms still persist.

If then a positive reaction is found present after such an interval has elapsed it indicates the continued existence of a focus of infection.

There is one class of cases in which the use of this test is especially valuable, namely, old cases giving a history of gonorrhea several years previously or even of more recent date, such as cases of postgonorrhoeal urethritis, where there is a slight but persistent discharge, but where no gonococci can be demonstrated microscopically. Many such cases are promptly subjected to irrigations, injections, etc., with the idea of destroying gonococci when the application of a complement fixation test would show that the gonorrhoeal

procedure requisite for such an investigation. Fortunately these chronic cases are just the ones giving the highest percentage of positive results. Where the organisms are readily detected by the microscope the blood test can, of course, be dispensed with.

Many patients presenting themselves with various joint conditions will give a gonorrhoeal history and the question at once arises as to whether the ailment is indeed gonorrhoeal in nature. Obviously the demonstration of the organisms is practically impossible in most cases, while the application of complement fixation is simple and gives very accurate results.

#### EFFECTS OF VACCINES

Cases which have received gonorrhoeal vaccines generally give positive reactions. We have tested

20. Torrey: Jour. Med. Research, 1910, xxii, 95.

three such and all gave positive results. This has been the usual finding: Keyes<sup>15</sup> reported two cases thus treated which failed to give positive results. Rockwood<sup>19</sup> likewise failed to get results in five cases out of eighteen. These results may have been due to the use of inert vaccine, or perhaps to the fact that sufficient time had not elapsed between the administration of the vaccine and the performance of the reaction. That some of the commercial vaccines are practically inert one of us observed several years ago when testing the effect of typhoid vaccines. Repeated injections failed to produce a positive Widal reaction until another vaccine was employed whose application was shortly followed by a positive reaction.

Since the application of properly prepared gonorrheal vaccines is usually followed by the production of gonorrheal antibodies we have a rational basis for their use and an explanation of their clinical value. Although they have proved of doubtful value in acute urethritis, still we feel that their use is justified in such conditions, as the antibodies thus generated should be of value in preventing the complications so often developing during the course of an attack of gonorrhea. Since the antibodies are not developed in the early stages of an acute urethritis the body has no protection against an extension of the infection, and their stimulation by vaccines certainly seems a logical procedure.

Our series comprises 100 cases, about one-half of whom gave a gonorrheal history or had symptoms of the disease. Where possible a search for the gonococcus was made, but as we did not see all of the patients personally, this was not always possible.

We also made the test on a number of blood-specimens submitted for Wassermann reactions. The majority of them either denied any history of gonorrhea or claimed that they had been free from all symptoms for years. The few positive results obtained in this class of cases will be taken up later. In no case, however, did we find a positive reaction where gonorrhea could be excluded with reasonable certainty.

The following is a tabulation of the 100 cases, with a brief clinical history, and shows the results of the complement fixation test. We have made use of only four terms in expressing the degree of the reaction: thus + + + (strongly positive), + + (positive), + (weakly), — (negative). When the reaction was very weakly positive, or doubtful, we have reported it as negative as we do not feel that much importance should be attached to such results.

TABLE 1

Case No.	History and Clinical Condition	Blood Test
1	Acute gonorrhea 1 month duration, has had several doses of vaccine. Gonococci present .....	+++
2	Chronic relapsing gonorrhea. Has had 8-10 doses of vaccine. Gonococci present .....	+++
3	Gonorrhea 6 years ago. Clinically cured. Now has Influenza .....	—
4	No gonorrheal history. Has chronic articular rheumatism .....	—
5	Gonorrhea for past 3 weeks. Now has perineal abscess. Gonococci present .....	+++
6	Gonorrheal arthritis. Urethral discharge contains gonococci .....	+++
7	Gonorrhea 5 months ago. Persistent discharge which contains gonococci .....	+++
8	Gonorrhea 2 months ago. Clinically cured ..	+
9	Gonorrhea 3 years ago. Never cured. Now has chronic prostatitis with pus in urine ..	—
10	Gonorrhea 3 years ago. Discharge off and on since. One week ago developed unilateral epididymitis .....	++
11	No gonorrheal history .....	—
12	No gonorrheal history .....	—
13	No gonorrheal history .....	—
14	No gonorrheal history .....	—
15	Denies venereal exposure. Now has active secondary lues with positive Wassermann reaction .....	+++
16	No gonorrheal history .....	—
17	No gonorrheal history .....	—
18	No gonorrheal history. Has positive Wassermann. Latent lues .....	—
19	No gonorrheal history .....	—
20	No gonorrheal history .....	—
21	Gonorrhea 4 months ago. Clinically cured ..	+
22	Gonorrhea September, 1911. Now has chronic prostatitis. Gonococci not found ..	—
23	Gonorrhea 7 months ago. Now has chronic ant.-post. urethritis. Moderate discharge contains gonococci .....	++
24	Gonorrhea 5 years ago. Second attack two months ago. Has chronic ant.-post. urethritis .....	++
25	Gonorrhea 25 years ago. Second attack one month ago. Gonococci present .....	+
26	Chronic gonorrhea past three years. Has had ant.-post. urethritis, epididymitis and cystitis. Clinically cured at present .....	+
27	Gonorrhea one and a half years ago. Still has slight mucoid discharge. Gonococci not found. Clinically cured .....	—
28	Gonorrhea three years ago. Clinically cured ..	—
29	No gonorrheal history .....	—
30	No gonorrheal history .....	—
31	Gonorrhea in 1907. Lasted until 1908. Then treated for mucoid discharge for one year. Has had two attacks of epididymitis. No discharge now but there is pus in the prostate. No gonococci found .....	—
32	Gonorrhea three years ago. Second attack five months ago. Clinically cured .....	—
33	Gonorrhea seven years ago. Second attack one year ago. Clinically cured .....	—
34	Gonorrhea four to five weeks ago. Gonococci present .....	+++
35	Gonorrhea past three months. Has chronic ant.-post. urethritis .....	++
36	Chronic cervicitis. Gonococci present .....	+
37	No gonorrheal history. Has tuberculosis of spine (?) .....	—
38	No gonorrheal history. Has acute iritis .....	—
39	Denies gonorrhea. Has active secondary lues ..	+
40	No gonorrheal history. Has acute iritis .....	—
41	No gonorrheal history .....	—
42	No gonorrheal history. Is recovering from pneumonia and has evening rise of temperature .....	—
43	No gonorrheal history .....	—
44	Gonorrhea five weeks ago. Gonococci present .....	+++
45	No gonorrheal history .....	—
46	No gonorrheal history .....	—
47	No gonorrheal history .....	—
48	No gonorrheal history. Has cirrhosis of liver with ascites .....	—
49	No gonorrheal history .....	—
50	No gonorrheal history .....	—
51	Gonorrhea ten years ago. Second attack eight years ago. Clinically cured .....	—
52	No gonorrheal history. Has latent lues with positive Wassermann .....	—
53	Repeated attacks of gonorrhea. Has had ant.-post. urethritis for past three months. Gonococci present .....	+++
54	Gonorrhea three years ago with prostatitis. Prostate still contains pus, but no gonococci found .....	—
55	Gonorrhea one year ago with epididymitis. No discharge for several months, but patient has been under vaccine treatment last few months .....	++

Case No.	History and Clinical Condition	Blood Test
56	Gonorrhea three years ago. Blood was positive August, 1912, and patient has been under treatment since. Clinically cured....	—
57	Gonorrhea ten years ago, six years ago and one year ago. Present attack began four weeks ago. No discharge at present.....	+++
58	Gonorrhea one year ago. Clinically cured....	—
59	No gonorrheal history .....	+
60	Chronic cervicitis .....	+++
61	Gonorrhea one year ago. Clinically cured....	+
62	No gonorrheal history. Secondary lues.....	—
63	Gonorrhea nine times in past eleven years. Last attack six years ago. Now has scanty watery discharge. Gonococci not found....	—
64	Gonorrhea, 1906, July, 1912. Had second attack, December, 1912. Has chronic prostatitis. No gonococci found.....	—
65	Gonorrhea 1906. Has never been cured. Now has prostatitis with very slight discharge. No gonococci found.....	—
66	First attack fifteen years ago. Second attack fourteen years ago. Third attack eleven years ago. Fourth attack November, 1912. Since then has had free discharge, but no gonococci could be found.....	++
67	No gonorrheal history. Latent lues with positive Wassermann .....	—
68	Gonorrheal salpingitis eight years ago. Ovaries and tubes removed. No present symptoms .....	—
69	No gonorrheal history .....	—
70	No gonorrheal history .....	—
71	No gonorrheal history .....	—
72	Gonorrhea fourteen months ago. Second attack seven months ago. No treatment for past three weeks. Has very scant watery discharge. No gonococci found....	—
73	Gonorrhea four months ago. Has an occasional morning drop but no gonococci found	—
74	Gonorrhea 1910. Has had chronic prostatitis since. Jan. 1, 1911, was clinically well and no gonococci could be found. Feb. 20, 1913, discharge began which contains numerous gonococci. One week later prostate was markedly involved.....	++
75	Gonorrhea one year ago. Discharge ever since. Now has chronic prostatitis, but no gonococci can be demonstrated.....	++
76	Gonorrhea one year ago. Cured in four months. September, 1912, discharge appeared. Has chronic prostatitis, but no gonococci can be found .....	++
77	Gonorrhea thirteen years ago. Second attack eleven years ago. Third attack two years ago. Since then has had chronic prostatitis. No gonococci found .....	++
78	Gonorrhea nineteen years ago. December, 1911 second attack. Since then has had very slight discharge in which no gonococci can be demonstrated. Urine is clear except for an occasional shred. Patient clinically cured .....	—
79	Gonorrhea three years ago. Second attack in June, 1912. Has had discharge ever since. Gonococci present .....	+++
80	Acute gonorrheal discharge appeared three weeks ago. Gonococci present.....	+
81	Gonorrhea spring, 1912. First attack two years before that. Now has chronic prostatitis, but no gonococci can be demonstrated	—
82	No gonorrheal history. Congenital lues.....	—
83	No gonorrheal history. Tertiary lues.....	—
84	No gonorrheal history.....	—
85	No gonorrheal history .....	—
86	Chronic ant.-post. urethritis, Gonococci present .....	+++
87	No gonorrheal history .....	—
88	No gonorrheal history .....	—
89	No gonorrheal history .....	—
90	No gonorrheal history, secondary lues.....	—
91	No gonorrheal history. Infant six weeks old .....	—
92	Acute gonorrheal discharge appeared about twenty-three days ago. Gonococci present.	+
93	Gonorrhea, August, 1912. Discharge off and on since. Gonococci present March 1, 1913	+++
94	Gonorrhea seven years ago. No symptoms now. Complaints of weak erections.....	—
95	Gonorrhea one month ago. Gonococci present .....	++
96	Gonorrhea five years ago. No symptoms until five months ago when slight discharge started. Gonococci not found.....	—
97	No gonorrheal history. Has latent lues with positive Wassermann .....	—
98	No gonorrheal history. Cured luetic .....	—
99	No gonorrheal history. Cured luetic.....	—
100	No gonorrheal history. Has Iritis and chorioiditis .....	—

In order to get some classification of our cases we have classified them under the following heads: An accurate classification is difficult since many of these cases show more than one symptom, as patients with urethritis, for instance, will also have prostatitis, etc. We have, therefore, classified them according to the most prominent symptom.

#### 1. ANTERIOR URETHRITIS

We did not have any very early cases but the reaction is almost uniformly negative under three weeks.

#### CHRONIC ANTERIOR URETHRITIS

Case No.	Fixation Test	Gonococci
25	+	present
34	+++	present
44	+++	present
80	+	present
92	+	present
95	++	present

In all six of these cases the discharge has been present over three weeks.

#### 2. CHRONIC ANTEROPOSTERIOR URETHRITIS

Case No.	Fixation Test	Gonococci
7	+++	present
23	+++	present
24	+++	no exam.
35	+++	no exam.
53	+++	present
57	+++	not found
66	++	not found
79	+++	present
86	+++	present
93	+++	present
96	++	not found

Case 57 is of special interest. There has been no discharge for some weeks, and no gonococci can be demonstrated microscopically. The persistence of a strongly positive reaction four weeks after cessation of treatment, however, would point to a continuance of the infection. As this is the forth attack of gonorrhea which the patient has had, we would certainly expect some involvement of the deeper structures and this is most probably what has occurred.

#### 4. PROSTATITIS

Case No.	Fixation Test	Gonococci
9	—	no exam.
22	—	not found
31	—	not found
54	—	not found
64	—	not found
65	—	not found
74	++	present
75	++	not found
77	++	not found
81	—	not found

These were nearly all old cases of several years duration. In most of them, apparently, the gonococci had died out, leaving a secondary infection with some of the common pus organisms as the active factor in maintaining the inflammation. Cases 75 and 77 which were positive were cases of one and two years standing, respectively. Case 74 was of interest: The patient had had gonorrhea in 1910 with chronic prostatitis. He



was examined in January, 1911, and pronounced clinically well. Feb. 20, 1913, discharge containing gonococci appeared following exposure. Feb. 28, 1913, the fixation test was strongly positive. As only one week had elapsed between the appearance of the discharge and the strongly positive fixation test the question arises as to whether this strong positive reaction was due to the new infection, or to a continuation of the old process on which a new infection had been grafted. We think the latter is the correct answer.

## 5. EPIDIDYMITIS

Case No.	Fixation Test	Gonococci
10	++	no exam.

## 6. GONORRHEAL ARTHRITIS

Case No.	Fixation Test	Gonococci
6	+++	present

## 7. NON-GONORRHEAL ARTHRITIS

Case No.	Fixation Test	Gonococci
4	—	no search

This was a case of chronic articular rheumatism of fifteen years standing.

## 8. CASES TREATED WITH VACCINES

Case No.	Fixation Test	Gonococci
1	+++	present
2	+++	present
55	++	no exam.

The true test of a vaccine would be to administer it to non-gonorrheal cases, but we were unable to find suitable victims. The first two cases would probably have shown a positive reaction without the vaccines. The third was that of a man presumably cured several months ago, but to whom vaccines had continued to be given.

## 9. CERVICITIS

Case No.	Fixation Test	Gonococci
36	+	present
60	+++	no exam.

Case 60 was that of a woman who denied gonorrhea but who had been under treatment for syphilis, and who complained of a profuse cervical discharge.

## 10. PERINEAL ABSCESS

Case No.	Fixation Test	Gonococci
5	+++	present

Acute urethritis of three weeks' duration followed by abscess.

## 11. CLINICALLY CURED

Case No.	Fixation Test	Gonococci
8	+	no exam.
21	+	no exam.
26	+	no exam.
61	+	no exam.
3	—	no exam.
27	—	no exam.
28	—	no exam.
32	—	no exam.
33	—	no exam.
51	—	no exam.

Case No.	Fixation Test	Gonococci
56	—	no exam.
58	—	no exam.
63	—	not found
68	—	no exam.
72	—	not found
73	—	not found
78	—	not found
94	—	not found

Case 8 stopped treatment only a few weeks ago and the weak positive reaction probably represents a fading reaction which will become entirely negative in a few weeks more. The same is true in case 21. Case 26 is one of chronic gonorrhea with prostatitis. Here sufficient time (eight weeks) has elapsed to permit of the complete elimination of any antibodies, hence we must conclude that the patient is still harboring living gonococci. Case 61 has been free from symptoms for several months yet a positive reaction persists indicating continued infection. The negative cases were free from all symptoms except cases 63, 72, 73 and 78. These four showed a slight mucoid discharge in which no gonococci could be found. In a total of eighteen cases clinically cured we find two still positive where ample time has elapsed since treatment to permit of the complete elimination of all antibodies if new ones were not being constantly produced by still living organisms. This percentage of 11.1 accords closely with the results obtained by Schwartz and McNeil who found that 13 per cent of cases clinically cured for at least three months still harbored living gonococci as shown by the fixation test. Gardner and Clowes found about 20 per cent. to be still positive, while Rockwood gives a percentage of 17 as representing the proportion uncured among those free from clinical symptoms.

These figures serve to emphasize the danger of turning loose so-called cured cases without careful microscopic and serological examination, especially the latter, since the danger of infection from these individuals is much greater than is the case with old or latent syphilitics. Since 50 to 75 per cent. of adult males contract gonorrhea and as approximately 10 per cent. of the supposedly cured are still infectious, we can readily understand why it is that such a large percentage (65 per cent.) of gynecological operations are rendered necessary by the ravages of this organism.

With the complement fixation tests for syphilis and gonorrhea now available anyone who has suffered from either of these diseases and enters the field of matrimony without first subjecting himself to the light which these reactions can throw on his fitness does a great injustice to his future partner. Certain states now require a medical certificate before marriage, but such bills

TABLE 2

Clinical Diagnosis	Schwartz and McNeil			Gradwohl			Schmidt			Keyes			O'Neill			Gardner and Clowes			Rockwood			Owen and Snure		
	Pos.		Neg.	Pos.		Neg.	Pos.		Neg.	Pos.		Neg.	Pos.		Neg.	Pos.		Neg.	Pos.		Neg.	Pos.		Neg.
	No. Cases	Per Cent.	No. Cases	Per Cent.	No. Cases	Per Cent.	No. Cases	Per Cent.	No. Cases	Per Cent.	No. Cases	Per Cent.	No. Cases	Per Cent.	No. Cases	Per Cent.	No. Cases	Per Cent.	No. Cases	Per Cent.	No. Cases	Per Cent.	No. Cases	Per Cent.
1—Acute gonorrheal urethritis— (a) Duration under 3 weeks (b) Duration uncertain	0	0	3 100	0	0	18 100	1	7 13 93								3 43	4 80	1 20	0	2 100	0	6 100	0	0
2—Acute urethritis, gonococci not found	19	90	2 10	0	0	1 100				0	0	1 100				4			0	2 100				
3—Chronic gonorrheal urethritis— (a) Gonococci present at time of test (b) Gonococci not found (c) No examination-stage when gonococci are usually absent	7	35	16 65				15 46 17 54			0	0	3 100	77 64 43			20 100	6 50	6 50	18 86	3 14	6 100	0	0	0
4—Chronic urethritis, history of gonorrhea doubtful	10	32	21 68							5	83	1 17	5	71	2 29	5	83	1 17	5	71	2 29	2 100	0	0
5—Chronic prostatitis— (a) With gonorrheal history (b) Gonorrheal history doubtful	46	47	52 53			12 80	3 20									9	82	2 18	9	82	2 18	3 30	7 70	
6—Epididymitis— (a) Gonorrheal history (b) No gonorrheal history	2	67	1 33					5 45 6 55								3	100	0	11	61	7 39	1 100	0	0
7—Verumontanum cases— (a) Gonorrheal history (b) No gonorrheal history	4	19	17 81													4	80	1 20	1	11	8 89			
8—Clinically cured cases— (a) Gonorrheal history (b) No gonorrheal history	22	13.2	143 86.8							3	15	15 85				4	21	15 79	6	17	30 83	2	11.1	16 88.9
9—Joint affections— (a) Gonorrheal arthritis (b) Gonorrheal arthritis doubtful (c) No gonorrheal arthritis	16	94	1 6			3	75	1 25					11 78	3 22		1	100	0	2	100	0	1 100	0	0
10—Cases treated with vaccines— (a) Gonorrheal arthritis (b) No gonorrheal arthritis	19	61	12 39					2 40 3 60					3 50	3 50					2	25	6 75	0	0	1 100
11—Miscellaneous cases— (a) Gonorrheal present or suspected (b) No signs or history of gonorrhea	10	100	0 0							0	0	2 100				13	21	48 79	28	85	5 15	3 100	0	0
12—Gynecological cases— (a) Gonococci present (b) No signs or history of gonorrhea	13	20	50 80					2 5 36 95					11 20 44	80					0	0	5 100	3 7	41 93	
13—Seminal vesiculitis (a) Gonococci present (b) Gonococci not found	2	100	0 0																4	57	3 43			
14—Cervicitis (a) Gonococci present (b) Gonococci not found	1	25	3 75										22 46 26	54		1	100	0	0	0	1 100			0
15—Tubo-ovarian cases— (a) Gonorrheal (b) Non-gonorrheal	10	77	3 23			3	100	0 0					13 87	2 13		1	50	1 50						
16—Pelvic peritonitis (a) Gonorrheal (b) Non-gonorrheal	12	63	7 37			3	75	1 25					0	0	4 100									
17—Gonorrheal abscess (a) Gonorrheal (b) Non-gonorrheal	3	75	1 25			1	100	0 0					0	0	1 100									
18—Vulvo-vaginitis in children	2	100	0 0																			1 100	0	0

\* Ninety-five to 100 per cent. are positive.

will be of little value unless they make obligatory the application of these tests. One of the chief objections to all such bills has been that they demand a certain amount of exposure on the part of female patients and this objection can be entirely overcome by requiring these tests. There are few people so depraved that they would enter matrimony while suffering with an acute venereal disease and these are practically the only stages which a physical examination would reveal.

#### 12. MISCELLANEOUS CASES

Case No.	Fixation Test	Gonococci
15	+++	no exam.
39	++	no exam.
59	+	no exam.
11	—	no exam.
12	—	no exam.
13	—	no exam.
14	—	no exam.
16	—	no exam.
17	—	no exam.
18	—	no exam.
19	—	no exam.
20	—	no exam.
29	—	no exam.
30	—	no exam.
37	—	no exam.
38	—	no exam.
40	—	no exam.
41	—	no exam.
42	—	no exam.
43	—	no exam.
46	—	no exam.
47	—	no exam.
48	—	no exam.
49	—	no exam.
50	—	no exam.
52	—	no exam.
62	—	no exam.
67	—	no exam.
69	—	no exam.
70	—	no exam.
71	—	no exam.
82	—	no exam.
83	—	no exam.
84	—	no exam.
85	—	no exam.
87	—	no exam.
88	—	no exam.
89	—	no exam.
90	—	no exam.
91	—	no exam.
97	—	no exam.
98	—	no exam.
99	—	no exam.
100	—	no exam.

These forty-four cases all denied any history of gonorrhea and were selected at random from patients presenting themselves for Wassermann tests. Some were clinically and serologically syphilitic, while others represented a variety of morbid conditions. Cases 15 and 39 both denied venereal exposure but showed the lesions and blood-reactions of an active secondary syphilis. Case 59 was that of a woman under recent treatment for lues. Here likewise the possibility of gonorrhea cannot be denied. We thus find that 6.8 per cent. of individuals selected at random show evidence of an active gonorrhea. The figures of other observers run as high as 20 per cent. of positive tests among such cases.

Table 2, on page 255, represents a compilation of all the cases which have been reported to date where a polyvalent antigen was used in the tests. As the different men have classified their cases

differently it has been hard to arrange a uniform system of classification. We therefore wish to state that the tabulation does not in all instances follow accurately that of the original reporter.

#### CONCLUSIONS

1. The complement fixation test gives a very high percentage of positive results when gonococci are present, except in the very acute stage.
2. Complement fixation will often point to the presence of gonococci when they cannot be demonstrated microscopically.

3. A positive reaction has never been found in a non-gonorrheal patient.

4. Cured cases become negative in five to eight weeks. Persistence of a positive reaction beyond this time indicates that living organisms still exist.

5. The test has shown that 10 to 20 per cent. of clinically cured cases are still infectious.

6. Tests performed on a large number of individuals, selected at random without any regard to a gonorrheal history, show an astonishingly large percentage (7 to 20 per cent.) of positive results.

7. All matrimonial candidates should subject themselves to the application of the Wassermann and gonorrheal tests if they have ever had syphilis or gonorrhea.

We wish to express our grateful thanks to Drs. Keane, Muller, Feckheimer, Martin, Jennings and Burke, who so kindly placed their clinical material at our disposal.

#### THE HEART IN ARTERIOSCLEROSIS \*

COLLINS H. JOHNSTON, B.A., M.D.

GRAND RAPIDS, MICH.

Vital statistics tell us that heart disease with its attendant changes in the arteries and kidneys is much more frequent than formerly. Even the public press has taken notice of this fact and exploitations of new methods of treatment for the reduction of increased blood-pressure are not infrequent in the newspapers. It is, therefore, quite fitting that this society should devote an evening to the consideration of a diseased condition that lays low so many of the most successful and valuable members of every community.

Tuberculosis claims its victims chiefly from the early decades of life, leaving behind many visions of unfulfilled promises, while arteriosclerosis terminates the earthly career of many thousands of

\*Read before the Kent County Medical Society, Oct. 12, 1912.



men who have borne the heat and burden of the day and whose great achievements make their lives of great importance to a community.

It is a fortunate thing for a tuberculous individual to have an early hemorrhage as it often points the way to a correct diagnosis and proper treatment. I have heard Osler say, "that it is a fortunate thing for a victim of cardiovascular disease to find a little albumin and a few tube casts in his urine for the same reasons."

Unfortunately, however, the early stages of heart disease and hardening of the arteries have few, if any, pathognomonic symptoms and irreparable damage has usually been done when the condition is first discovered.

The specific etiology of tuberculosis is now well known and its final extermination is only a matter of time, and I believe that the more general interest now being taken in the problems of metabolism and the chemical changes taking place within the body will in time determine why premature old age so often attacks the heart and arteries rather than the lungs or the liver.

#### ETIOLOGY

Numerous causes are mentioned in the books for arteriosclerosis such as (1) hypertension, (2) chronic intoxications such as alcohol, lead and gout, (3) syphilis, (4) overeating, (5) the stress and strain of modern life, (6) overwork of the muscles, and (7) renal disease.

In many instances there seems to be an inherited predisposition to arteriosclerosis, entire families sometimes showing this tendency. I believe, however, that the specific and exciting etiology will become so well worked out and its predisposing symptoms, as recurrent headache, biliousness or dyspepsia, so generally recognized that our efforts will be devoted to preventing the development of arteriosclerosis rather than to stay the progress of an incurable condition after it has become recognized.

Apart from accidental deaths, mankind dies from two great causes: (1) acute or chronic infections; (2) diseases affecting the integrity of the heart and blood-vessels. I am not sure but that in time the latter will also be termed infectious conditions.

The pendulum, however, at the present time in many diseases—as for instance those of the gastrointestinal tract in infants—has swung from a bacteriologic etiology to a chemical one; I believe that metabolism, or disturbances in the chemical changes taking place in the body, play an important part in the etiology of the disease under consideration.

It is recognized by every one that these dis-

eases are incurable when once established, and that at the present time their specific etiology is but little understood is shown by the fact that such books as Osler's have little to say concerning the prophylactic treatment of arteriosclerosis.

It seems to be recognized that some unknown hidden agency is at work causing these diseases without definite knowledge of which we are unable to prevent their development. A few investigators<sup>1</sup> at the present time are inclined to believe that the specific etiologic factor is a toxin—an amin—formed by intestinal putrefaction of the several amino-acids of normal pancreatic digestion of proteids. If this proves to be true it is of tremendous importance that we should recognize that the prevention of heart disease and hardening of the arteries lies in proper regulation of the diet and habits of life of the individual and that a chemical examination of the urine will do more to determine the presclerotic stage of elevated blood-pressure than any number of physical examinations.

Diseases of the heart, blood-vessels and kidneys are so correlated that it is not possible to take a comprehensive view of the diseases of one without considering the affections of the other. It is often found that the earliest indications of disease in one is found in disturbances of the other. Chronic Bright's disease, for instance, is not essentially a disease of the kidneys alone. It is really a disease of the circulation in which disorders of the heart and blood-vessels play a prominent part. Oftentimes hypertrophy of the heart is the earliest detectable sign of chronic interstitial nephritis. So much so that in every case of cardiac hypertrophy we suspect the possibility of chronic Bright's disease or arteriosclerosis.

The initial condition is often an elevated blood-pressure and fortunate is the man whose case is correctly summed up at this time when proper treatment can prevent the development of secondary lesions which are irremovable. Osler says, "you can have arteriosclerosis without hypertension and hypertension without arteriosclerosis." Early in the disease the tension may be high with a normal arterial wall; therefore, one should always examine carefully to determine whether the vessels are rigid or not. That the pressure may be high without sclerosis was shown by an autopsy I recently saw in the case of a man 50 years old with a very large heart that was dilated and hypertrophied. The valves were normal, liver large and small sclerotic kidneys; no signs of arteriosclerosis were found excepting a small

1. Eustis, Vienna: Tulane University of New Orleans.

patch on the aorta. Although his blood-pressure was over 200, he had practically no arteriosclerosis whatever.

Stoerk says, "you can have a contracted kidney with cardiac hypertrophy, and elevated blood-pressure giving rise to cerebral hemorrhage without noticeable arteriosclerosis." Usually, however, hypertension and arteriosclerosis go together.

The increased resistance to the circulation thus produced, and the loss of elasticity in the coats of the arteries, eventually leads to enlargement of the heart; the finding of a hypertrophied left ventricle is often the first suggestion we have of arteriosclerosis or of a contracted kidney.

#### PATHOLOGY

Arteriosclerosis is a condition of thickening of the walls of the arteries, making them feel stiff and hard. When the increased tension stretches the arterial walls, they become tortuous as is often seen at the wrist and on the temple.

The changes produced by the disease are most marked in the aorta and are of two varieties: syphilitic and non-syphilitic. In syphilitic arteriosclerosis the atheromatic changes are most marked in the neighborhood of the aortic orifice and become less marked the farther you go from the heart. The ends of the valves may become adherent and the valves themselves much thickened so that insufficiency results with cardiac hypertrophy and dilatation. Syphilis is more apt to lead to valvular disease than simple arteriosclerosis.

The physical signs may resemble those of aortic insufficiency due to endocarditis but in the latter the blood-pressure would not be elevated, whereas in aortic disease, due to arteriosclerosis, the blood-pressure is above normal unless the stage of broken compensation has been reached.

In the non-syphilitic variety of arteriosclerosis the more distant parts of the aorta are sclerosed along with the peripheral arteries of the body. The difference in the location of these two varieties is beautifully illustrated in the coronary artery.

When the disease is due to syphilis the ostia may be entirely closed, while in a case of non-syphilitic arteriosclerosis; which I saw recently, the opening of both coronary arteries were large, but both arteries were stenosed in their course. The ascending and transverse aorta showed but little disease, but the farther down you went and the nearer you reached the peripheral arteries the more pronounced became the sclerosis. Involvement of the coronary arteries may lead to thrombosis and sudden death, fibroid degeneration of the heart muscle and angina pectoris.

In all large and medium-sized vessels arteriosclerosis leads to dilatation especially when the blood-pressure is high, in the smaller arteries it leads to narrowing.

#### PHYSICAL SIGNS

Where the aorta becomes dilated and tortuous the apex beat may be displaced downward and outward, a condition which is often mistaken for hypertrophy and dilatation of the left heart, whereas the hypertrophy and dilatation is really in the right heart, and is due to pulmonary changes, as in senile emphysema which frequently renders an examination of the heart difficult.

In insufficiency of the aortic valves, due to endocarditis, the second tone is not to be heard and the systolic murmur is best heard over the valves and somewhat to the left; but in insufficiency due to arteriosclerosis the murmur is best heard in various places, especially to the right of the sternum.

Hypertrophy of the left ventricle as a result of the increased resistance to the arterial circulation becomes apparent during life from the strength of the apex beat and its displacement to the left and also from the extension of the area of cardiac dullness to the left.

A wide, strong and heaving apex beat is a sure sign of hypertrophy and dilatation of the left ventricle. Often in nervous people the heart beats rapidly but on putting the hand over the heart it will be found that the beat is light and weak.

In 40 per cent. of adults the apex beat lies normally in the fourth interspace; in 60 per cent. in the fifth, seven to eight centimeters from the middle line, measuring always to the farthest point at the left where you can feel the impulse. The extent of the beat varies. Ordinarily it covers an area about two centimeters square.

Broadening of the apex beat is indicative of dilatation or hypertrophy and dilatation. Increase of the force of the apex beat indicates hypertrophy. Its intensity varies a great deal, depending on the amount of overlapping lung and the thickness and resistance of the thoracic wall. These variations and the fact that the apex beat may lie behind a rib instead of opposite an intercostal space, make it clear why quite healthy persons sometimes show no distinct apex beat.

When the apex beat is not over one and one-half or two fingers in breadth and is well circumscribed it cannot mean dilatation, especially of the left ventricle. In such a case the beat would be broader and not so circumscribed.

Palpation of an apex beat and percussion always make out the size of the heart to be larger

than an *x*-ray picture shows it. The right border of the heart on percussion usually conforms with the Roentgen picture. Not so the left, as Roentgen rays are parallel while percussion is made, as a rule, perpendicular to the chest wall. Hence the apex beat is located 1 to 3 centimeters farther to the left than is indicated by radiography.

It is generally more difficult to determine enlargements of the right heart by percussion than those of the left by reason of the notch in the left lung. The left heart is more accessible to percussion than the right which is covered more completely by lung and by the sternum.

The heart is enlarged both by hypertrophy of its walls and by the dilatation of its cavities. We cannot percuss accurately enough to appreciate 1 or 2 centimeters increase in the heart's size, which is the usual limit of enlargement in hypertrophy alone, nor do we ever in postmortems find a hypertrophy of this degree unless it is accompanied by dilatation. Any enlargement of the heart, therefore, which can be demonstrated by percussion must depend on dilatation of its cavities whether there be coexisting increase in the thickness of the walls or not.

A moderate dilatation of the right ventricle often produces only a dislocation of the left cardiac boundary, while it requires a very considerable dilatation of the right ventricle to increase the area of dullness to the right of the sternum.

Kovacs states, "that when dullness extends one finger's breadth to the right of the sternum it means dilatation of the right ventricle." The position of the apex beat, however, is about as helpful as anything in determining an enlargement of the left ventricle. On auscultation the increased tension in the aortic system is made manifest by accentuation of the second aortic sound.

When, in examining a case, we find a large heart, the mutual relations between increased arterial tension, hypertrophy of the left ventricle, contracted kidney and arteriosclerosis are so close that it is often impossible to tell which is the primary lesion, and from the point of view of treatment this is not at all necessary. The combination of heightened blood-pressure, palpable thickening of the arteries, hypertrophy of the left ventricle and accentuation of the second aortic tone are pathognomonic signs of arteriosclerosis.

The arterial degeneration may be the principal change, or it may be simultaneous with the nephritis, or it may be secondary to a primary affection of the kidneys.

I think it is well for us to always keep in mind that there are two kinds of kidney disease: (1) those with increased blood-pressure and a hyper-

trophy of the left ventricle, such as occurs in the various forms of chronic Bright's disease. An exception to this rule must be made in tuberculosis in which all cases of nephritis have a low blood-pressure.

There is but one form of contracted kidney where the heart does not hypertrophy and the blood-pressure rise, namely, in tuberculosis. In all other cases the left ventricle hypertrophies, but in the interstitial nephritis of tuberculosis there is no enlargement of the heart.

I recently saw a case of a young man, 24 years of age, who contracted nephritis five years ago. One year later he began to have lung symptoms and now has advanced tuberculosis. His nephritis has continued, the blood-pressure is 120, and there is no enlargement of the heart. The nephritis seemed to be the primary disease and is probably due to the tuberculous toxemia. In many cases of acute nephritis the left ventricle becomes hypertrophied as early as the third week. This, however, does not take place in all cases.

There are probably two causes for the hypertrophy of the heart in nephritis, toxic and mechanical. The resistance to the circulation caused by the contraction and thickening of the arterial walls in combination with the irritation of the walls of the ventricle by toxic substances give rise to a compensatory eccentric hypertrophy. In an ordinary nephritis the blood-pressure begins to rise in from two to four months. When it does not and the case is followed by pulmonary tuberculosis you know that the nephritis was tuberculous from the beginning.

The second class of kidney diseases referred to are those that have no increased arterial tension or enlargement of the heart, such as abscesses of the kidneys, tuberculosis, pyonephrosis, hydronephrosis, etc. This class includes all so-called surgical kidneys.

Surgical kidneys do not have an elevated blood-pressure but are usually accompanied by pus or other abnormal elements in the urine. The two conditions are exemplified in the same case as in that of a man 58 years of age with a blood-pressure of 240. The left ventricle was hypertrophied; the second aortic tone accentuated, and there was a loud systolic thrill to the right of the sternum. The hypertrophy showed that the case was neither one of tuberculosis, nor hypertrophy following endocarditis, so one had to look outside of the heart for the etiology.

There were three things to consider: 1. Simple Atheroma. 2. Aneurysm or dilatation of the aorta. 3. Kidney disease.

What signifies a hypertrophy? It is often an early symptom of atheroma, in which case the



urine is free from albumin. In this case the urine was acid, specific gravity 1.004, no sugar or blood, no casts or epithelium. One-half per cent. bulk albumin was present and numerous leukocytes which indicated inflammation or sup-puration somewhere in the urinary tract. Pus is often found in the urine in a surgical kidney. Only chronic interstitial nephritis could account for the blood-pressure. Inasmuch as one often fails to find casts in the urine, for days or weeks at a time in a case of contracted kidney, their absence here did not prevent me from making a diagnosis of chronic interstitial nephritis. The pus in the urine was probably due to a coincident pyelitis.

Another case was that of a man 62 years of age with a big heart and a Corrigan pulse. There was a thrill over the aortic area just following the systole. There was also a loud systolic murmur which might have been due to (1) stenosis (the pulse, however, was not such as would be present in stenosis); (2) aneurysm; (3) dilatation of the aorta. The thrill and the big heart indicated aortic disease with insufficiency. The largest hearts on record are due either to aortic regurgitation or chronic interstitial nephritis. Arteriosclerosis alone gives rise to but a moderate hypertrophy and a moderate degree of hypertension. Murmurs at the base are likely to be due to arteriosclerosis and not to rheumatism. Lesions of the mitral valves are usually due to rheumatism.

When you have a case like this with a murmur also at the apex, if your patient has ever had rheumatism, you may be safe in calling it mitral insufficiency. If no rheumatism appears in the history and he has had arteriosclerosis or syphilis, the murmur at the apex is probably due to dilatation.

The impossibility of determining the initial lesion in these cases is illustrated in a case of cardiac hypertrophy in a man 60 years of age, with a blood-pressure of 200. The urine contained 5 per cent. bulk albumin, with a specific gravity of 1.015, light colored and twelve to fifteen hundred c.c. were passed in a day. Many of the kidney cells were in a state of fatty degeneration, indicating a chronic condition as well as parenchymatous nephritis. The specific gravity and the amount of urine passed per day would indicate a contracted kidney. The liver was normal; spleen not palpable. The high blood-pressure indicated a contracted kidney. There was a systolic murmur over the base of the heart heard most distinctly over the aortic orifice. No thrill, however, was present and instead of a small

pulse, the radial artery was hard, giving the water-hammer pulse characteristic of aortic insufficiency, which could not have been the case if aortic stenosis were present. The large amount of albumin might indicate an acute nephritis, but fatty degeneration in the cells or corpuscles does not occur in an acute condition; the blood-pressure in nephritis does not increase until contraction begins.

In old people we often get the urine of passive venous congestion following broken compensation in cases of old sclerotic kidneys, but if this was the case with so much albumin, the urine would be dark in color and its specific gravity high. Moreover, such blood-pressures as 200 are found usually only in kidney lesions.

The highest grades of blood-pressure occur in chronic interstitial nephritis. The highest grades of edema occur in chronic parenchymatous nephritis. In contracted kidneys, we rarely find any edema. In mixed cases, we may get a moderate degree.

Aortic insufficiency may be the result of endocarditis or of arteriosclerotic changes in the valves. The former consideration is eliminated by the elevated blood-pressure. It is impossible to tell clinically a syphilitic from a non-syphilitic aortitis. The diagnosis, therefore, was arteriosclerosis, aortic insufficiency from arteriosclerotic changes in the valves, hypertrophy and dilatation of the left ventricle, dilatation of the right ventricle, chronic parenchymatous nephritis, myocarditis and an old arteriosclerotic kidney, as shown by the high blood-pressure.

#### DIFFERENTIATION

The differentiation of the cardiac hypertrophy of arteriosclerosis from that of valvular disease is an easy matter, excepting in late stages of valvular disease.

A mild degree of mitral insufficiency may exist for a short time which will not give rise to hypertrophy, but it is not safe to diagnose insufficiency of the mitral valves without cardiac hypertrophy and its accompanying conditions. Moreover in uncomplicated cases of valvular lesions no matter how great the hypertrophy, the blood-pressure is never raised. The hypertrophy is a compensatory one and when properly established the pressure in the arteries is normal.

In studying these cases one should always remember that when compensation is perfect, blood-pressure is normal; when incompetency begins, the blood-pressure drops. Eventually in all of these cases the heart becomes hypertrophied and

dilated and, as an hypertrophied muscle tends to become degenerated, we later get fatty degeneration and myocarditis.

There is no sure clinical sign of myocarditis. The symptoms of it vary greatly. The therapeutic test, however, can usually be relied on. When a heart muscle is normal, digitalis acts well; the pulse-rate is decreased, and the urine is increased in quantity. When, however, the heart muscle is degenerated but little effect is derived from its administration.

Sooner or later, a second important group of cardiac symptoms results from the dilatation which finally gets the better of the hypertrophy in arteriosclerosis, namely, symptoms of broken compensation.

#### LOST COMPENSATION

A blowing systolic murmur appears at the apex due to relative insufficiency of the mitral valves, dyspnea, anemia, scanty urine and other symptoms of cardiac insufficiency. The symptoms are practically the same whichever lesion may happen to have been the primary one.

Kovacs emphasizes the fact that tenderness on pressure over the epigastrium is always the first sign of incompetency of the heart and the next sign is the filling of the veins of the neck which become larger than normal and pulsate. He calls the liver the "manometer of the competency of the heart" and says, "it is always the first organ to show failure of compensation." The liver of passive congestion is first enlarged and the sensitiveness on pressure is due to the hyperemia present. Later it may become smaller than normal from contraction of the newly formed connective tissue.

I think we should always try to explain a low blood-pressure. It may be due to anemia, malnutrition, valvular disease (especially of the left side of the heart), strain, weakness, inflammation or degeneration of the heart muscle itself, incompetency following arteriosclerosis or interstitial nephritis and many other causes. After an acute illness it sometimes does not reveal itself until the patient has resumed his ordinary occupation. It seems sometimes to be a normal condition.

Low-pressure cases occasionally become high pressure as when valvular disease causes Bright's disease. High-pressure cases are not convertible into low pressure excepting after incompetency.

#### CARDIAC IRREGULARITY

There are several different varieties of irregularity of the heart to which patients with arteriosclerosis are subject: 1. Respiratory irregularity

in which the pulse-rate is increased during inspiration and diminished during expiration. It is only present when the patient is at rest and disappears when the heart's rate is increased from any cause such as fever or excitement. 2. Extrasystoles in which each contraction of the heart is not accompanied by a pulsation at the wrist. The pulse, therefore, is of an intermittent character. These extrasystoles are found in arteriosclerosis, contracted kidneys, nicotin and digitalis poisoning, etc. It is well known that large doses of digitalis produce extrasystoles in which the heart beat is double that of the pulse at the wrist. They may also be met with in neurasthenia, but when the patient is put to bed the blood-pressure becomes normal and the extrasystoles disappear. You cannot get an extrasystole with a subnormal blood-pressure.

The third form of cardiac arrhythmia is the perpetual irregularity in which there is a contraction of the heart with every pulsation at the wrist but in which the ventricular contractions follow no regular rule. Such cases never regain a regular pulse. This perpetual irregularity occurs in mitral stenosis, myocarditis and myocardial degeneration, the result of arteriosclerosis.

McKenzie states, "that 70 to 80 per cent. of the cases of heart disease with really serious failure of the heart belong to this class and that the recognition of this condition is of the greatest importance as a great deal of good can be done by judicious treatment."

### THE TREATMENT OF TRIGEMINAL NEURALGIA BY SUPERFICIAL INJECTION OF OSMIC ACID AND ALCOHOL\*

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Trigeminal neuralgia is a functional disease of the fifth nerve. It is a degenerative disease and usually occurs after the fortieth year, but may occur as early as the nineteenth year. Men are more often afflicted than women. The disease is unilateral, as a rule; in diabetes the bilateral form is sometimes seen. The right side of the face is affected more often than the left side.

#### ANATOMY

The fifth nerve is a sensory nerve with one motor root. The sensory portion arises in the cells of the Gasserian ganglion. After leaving

\* Read at a meeting of the Kent County Medical Society, Feb. 8, 1913.

the ganglion, the nerve divides into three branches: the superior, or ophthalmic branch makes its exit from the skull through the sphenoidal fissure; the middle, or supramaxillary branch, through the foramen rotundum; the inferior, or inframaxillary branch, through the foramen ovale. Peripherally these branches are reached through the supraorbital, infraorbital and mental foramina.

#### ETIOLOGY

The cause of trigeminal neuralgia is an open question. Undoubtedly, infectious diseases, ocular diseases, nasal diseases and deformities, carious teeth, sinus infections, alcoholism and exposure to the elements, predispose to the disease. Malarial infection and rheumatic iritis particularly favor neuralgia of the ophthalmic branch.

#### SYMPTOMS

The pain is neuralgic in character. Usually one or two—rarely all of the branches—are affected. The pain first appears and is most intense in one particular spot; it always reappears in this same spot. The pain is paroxysmal. Paroxysms can be produced by external sensory stimuli peculiar to the individual case—bright light, the touch of a finger or handkerchief, a breath of cold air, the taking of food in solid or liquid form, tasting sweet or sour foods—bring on the paroxysms. It is indeed pitiful to observe the extremes to which the patient resorts in order to avoid these stimuli. The paroxysm usually lasts from a few seconds to a few minutes; in severe cases it may last as long as four hours or more.

The pain radiates over the area of distribution of the particular branch or branches affected. In supraorbital neuralgia, the pain radiates over the forehead, and may also be felt in the eyelid and eyeball. The tender point in affections of this branch is over the supraorbital notch. In neuralgia of the middle branch, the pain is felt between the orbit and the roof of the mouth; also, in the side of the nose and in the upper teeth. Tender points are found over the infraorbital foramen, along the gum of the upper jaw and along the side of the nose; the muscles of mastication may also be tender. In neuralgia of the inferior division, the pain is felt in the lower jaw, in front of the ear, at the side and tip of the tongue, and even in the occipital region. I have noticed that in nearly every case of neuralgia of the inferior branch, the patient complained of pain along the course of the temporauricular nerve. Tender points are found over

the mental foramen, opposite the tragus of the ear, and along the gum of the lower jaw.

The paroxysms always return. At first they are infrequent; later, the intervals between pains are shortened and the length and intensity of each twinge of pain increases. The pain is so severe and the paroxysms are so frequent that the patient is almost driven to desperation. More or less vasomotor disturbances are evident; the face is usually congested. Trophic symptoms, especially herpes, may occur. Contractions of the facial muscles are often seen. The pain is confined to one side, as a rule, rarely it crosses the median line.

#### DIAGNOSIS

Success or failure depends on accurate diagnosis, therefore, a careful examination is essential in order to determine which branch or branches are affected. One should always see a patient in a paroxysm. A history of when and where the pain was first experienced is necessary. The pain is most intense in one definite spot and always reappears in this particular spot, even though it may radiate. The pain is always paroxysmal. The disease should be differentiated. Sinus infections, nasal disease and diseased teeth are easily eliminated as definite lesions are discoverable. Cerebellopontile growths cause pain along the course of this nerve; but, other symptoms as optic neuritis, impaired hearing, vertigo, etc., are present. In disease of the Gasserian ganglion anesthesia coexists with the pain.

#### TREATMENT

First of all, the possible causative factor should be considered. If the patient has carious teeth or nasal deformities they should be remedied; however, one should not go too far in this direction. At first I used the straight alcohol injection, both superficial and deep, but soon discarded this method for a much simpler and, in my experience a ~~more~~ efficacious one. For the past three years I have been using a 1 per cent. osmic acid solution in alcohol; to this I add about 5 per cent. glycerin to keep the osmic acid in suspension. An ordinary hypodermic syringe and ordinary long needle are used. The needle is introduced into the foramen as far as the length of needle will permit, this is very essential, as a haphazard injection into the integument over the foramen does not bring about the desired result. Some difficulty may be experienced with the supra-orbital and mental foramina. They are smaller and vary in location more often than does the infra-orbital. The supra-orbital notch is the guide in injections of the ophthalmic division.



The infra-orbital foramen is about a quarter of an inch to one-half inch below the rim of the orbit; in a line drawn vertically it is almost exactly below the supra-orbital notch. This foramen is larger and is readily found. The mental foramen deviates slightly from the vertical line. A point to remember is that the mental foramen is always back of the bicuspid ridge. The needle enters this canal at an angle of about 45 degrees, being pointed toward the gnathion.

In some cases, particularly women, I inject a small amount of cocain into the integument over the foramen. One feels his way into the canal, and you can tell when you have entered by inability to move the needle side ways or up and down; the patient will also apprise you of the fact that you have entered the canal. Having introduced the needle, a few drops of the solution are injected. The patients will experience a sensation which they term "just like an explosion." Then slowly inject the rest of the solution: while this is being done the patients complain of a hot burning sensation along the course of the nerve. In injections of the infra-orbital foramen, patients will tell you that they can taste the hot burning solution. After injection the needle is slowly removed and the wound sealed with collodion. Following a successful injection there will be first a complete cessation of all pain; second, more or less anesthesia over the area of distribution of the nerve; third, every case has paresthesia—jerking or crawling sensations in the area of the nerve affected. This paraesthesia is persistent, lasting from six months to nine months. Patients should be told of this feature as many of them are neurotic, due to prolonged suffering and lack of proper nourishment and outdoor exercise. The neurotic condition should be treated by suggestive and supportive treatment.

#### PERSONAL EXPERIENCE

The results are very gratifying indeed, they seem almost miraculous to the patients and their friends. In my series of twenty-one cases covering a period of three years, I have had only one patient return for a second injection, this being due to faulty technic. It was a mental injection and I failed to inject back of the bicuspid ridge the first time I treated the patient. There is absolutely no danger connected with this method, there is slight swelling, but it soon subsides. The statement that abscesses follow the injection of osmic acid is not true if one takes an ordinary amount of aseptic precaution.

#### COMPARISON WITH OTHER METHODS

There is no necessity of subjecting a patient to gasserectomy until all other methods have

failed. Few men are competent to perform a good gasserectomy. The cost is prohibitive to the patient. The danger of injury to other nerves during the operation is great. The patients are old, as a rule, and do not stand a prolonged anesthetic well. There is also more or less disfigurement.

Resection or cutting of the nerve should be discarded. The trouble invariably returns in a short time; hence, the result does not justify the operation. It should also be discarded for cosmetic reasons.

In alcohol injections, both superficial and deep, the results are not as good as those obtained with osmic acid injections. In superficial alcohol injections the relief is only temporary. In deep injections the trouble will return and the relief is not as permanent as that obtained with osmic acid. The technic required to do the deep alcohol injections precludes its general use, as serious hemorrhages may follow faulty technic. Electricity is of no value. Drugs are a menace; there is absolutely no justification for pumping a patient full of morphia, or any other drug, as is so commonly done.

#### CONCLUSION

In conclusion let me say: the superficial method with osmic acid will prove a boon to many sufferers. Anyone who will make a careful diagnosis, observe a few rules of asepsis and remember a few points of anatomy can obtain results. No special syringe or needle is needed. The injection can be done in the office or at the home. There is no discomfiture, the patient can attend his business the same or at most the following day.

#### CLINICAL FACTORS IN X-RAY WORK \*

A. W. CRANE, M.D.

KALAMAZOO, MICH.

The roentgenologist usually has a medical education and the right to practice. His natural position is that of a consulting diagnostician. As such, he should feel obligated by the code of ethics of the American Medical Association and should guard the reputation and standing of the attending physician as a brother practitioner. Only on these terms can both work together for the good of the patient. The results of x-ray examinations should be communicated first to the attending physician. Communications to the patient are governed by the same rules as in other consultations. The plate of

\*Read at the Midwinter Session of the Western Section of the American Roentgen Ray Association, Chicago, Feb. 22, 1913.

original record belongs to the roentgenologist. The attending physician is entitled to a correct copy with an interpretation. The requests of the patient are properly referred to the attending physician.

As a consultant, the roentgenologist is entitled to a knowledge of all the facts in the case, and to the privilege of such examinations as are necessary to form his interpretation. Without these preliminaries he may produce beautiful plates without showing the pathology; or he may interpret screen and plate images without interpreting the case.

In the hurry of an *x-ray* practice many may attend only to the production of good plates. In fractures, kidney stones and foreign bodies this may be sufficient. But with the medical cases, which are now multiplying in *x-ray* work, such a course may put the roentgenologist in a position of defense and explanation. For example: The case is one of a stomach disorder, which has defied treatment. After the bismuth meal, after the fluoroscopic inspection in the upright and the horizontal position, after the manipulations of the wooden spoon, after the exposure and development of plates, then the attending physician and the patient expect results commensurate with the wonder of the performance. To have gone through an elaborate examination, in the midst of elaborate apparatus, and then to listen to elaborate explanations as to why we cannot tell exactly what the matter is, seems like straining for an elephant and bringing forth a mouse. To resist making a positive diagnosis under these circumstances is a test of character; or, of a sad experience, that diagnostic mistakes are boomerangs. Afterward is a poor time to go into the history and clinical examination of the case. Let us remember that in gastro-intestinal cases a diagnosis can rarely be made by the *x-ray* alone. Therefore, when such a case is brought in for examination, let us be sure that we can, so far as possible, assemble all the factors which are necessary to form a true diagnosis.

The most dangerous effort of the *x-ray* diagnostician is to attempt negative diagnosis without full clinical data. Perfectly normal bone detail may be shown on good plates in cases of early tuberculosis and other acute bone infections. As Dr. Potter once said in my presence: "In acute osteomyelitis, showing normal bone structure, the surgeon should forget that he had an *x-ray* plate and should pay attention only to the clinical indications."

The Roentgenologist is rightly called on to aid the clinician in diagnosing pulmonary tuberculosis in its earliest possible stages. Not infre-

quently, the physician has a family under his care where one or more have died of pulmonary tuberculosis. The first signs of pulmonary trouble in any of the surviving family are of paramount importance. He finds perhaps in one member a daily afternoon rise of temperature to 99 or 99.5. There is a slight cough, but no expectoration. The skin reaction of tuberculosis is present, but that in adults is of value only in the negative; so that it is of use for exclusion only. The signs over the chest are limited to a slight but definite increase in the breathing sounds on auscultation over the right side below the clavicle. There is no dulness on careful percussion. Such a case is brought to the *x-ray* table for final diagnosis. On the screen the diaphragm movement is unrestricted on either side. The darkening and lightening of the lung area during a forced expiration and inspiration are even and normal. No gross lesion can be seen on the fluoroscopic screen. There is no fluid in the chest. A good plate shows that the pulmonary area below the clavicle on the right side, over which the clinician heard increased breathing sounds, is in reality perfectly normal. The case narrows to a consideration of the hilum cluster of shadows. Here the roentgenologist is confronted with real difficulties. The hilum cluster may be present in the tuberculous and the non-tuberculous; in the old healed cases and in the fresh progressive cases; often in the young before 20; always in the adult after 40.

Lymphoid tissues, nodes and glands of the throat, bronchi and hilum are the forts and defenses of the lungs against bacterial invasion. The lymphatics of the hilum are the final line of defense guarding the rich nutritive areas of the lung. Arrested cases of tuberculosis and other respiratory infections are arrested at the hilum in the vast majority of mankind. Hence the confusion of skiagraphic interpretation of the hilum cluster.

Therefore, at just the point where the first skiagraphic signs appear is the point of greatest difficulty in interpretation. Here we are forced to acknowledge the superior value of the stethoscope and trained ears. The increased breathing sounds below the clavicle in the absence of pulmonary congestion or infiltration means increased density of the hilum structures whereby sound conduction is intensified along the larger intra-pulmonary bronchi. The clinical signs plus the skiagraphic signs, in a generalized case such as I have taken for illustration, definitely locates the trouble in one hilum. But the work of diagnosis does not end here.

The essential point in incipient cases is whether or not the lesion is progressive. Clinical observation is incontestably superior to any single *x*-ray examination for such a determination. But, if a plate a week or every two weeks is made, progression of a hilum infection or progression beyond the hilum may be demonstrated skiagraphically.

For such repeated examinations of the hilum, small plates and a small diaphragm increase definition and decrease expense.

In no department of *x*-ray diagnostics is the interpretation of screen and plate more clearly contrasted with the interpretation of the case as a whole, than in the examination of the alimentary system. Our roentgenographic factors are derived from observations of the esophagus, stomach or intestines coated with bismuth or barium or distended with air; also from observations of the food-mass, impregnated with bismuth or barium, as it undergoes the movement of digestion.

No more wonderful development has ever been seen in the whole range of medical history. Few clinicians yet realize that it is now practical to watch the bismuth meal enter the stomach; to see the peristaltic waves begin at the fundus and travel to the pylorus; to observe the food material as it is ejected into the duodenum and carried to the jejunum; to be able at the same time to palpate and move the viscera under inspection; to locate pain points, filling defects, muscular stasis, contractures, adhesions, the diverticula of perforating ulcer or the inertia of atrophy and ptosis. A few hours later (always, of course, within the time limits of *x*-ray safety) the bismuth-coated colon and portions of the ileum are ready for an inspection no less extraordinary and practical than in the case of the stomach. Pain-points, adhesions, angulations, stasis, ptosis, dilatations, the presence of a Lane's kink, the competency of the ileo-cecal valve, the position of the appendix and, not infrequently, the appendix itself are matters of *x*-ray observation.

The large open fluorescent screen, thus used, becomes a true roentgenographic moving picture. It brings the physical examination of the chest and abdomen to a degree of completeness beyond the youthful dreams of clinical masters still living. An exploratory operation on a patient under anesthesia through an incision from the ensiform to the pubes would often add less to the diagnosis. If we were able to remove the living viscera intact—as Carrel does in the case of animals—we would still be unable to duplicate the knowledge obtained from studying the

moving *x*-ray image of the bismuth-coated inside lining of the stomach and intestine in place in the conscious patient who is able to answer questions, describe sensations, while being palpated, and whose alimentary tube reacts to stimuli without the interference of anesthetics. But—impressive and valuable as this all is; yet apart from a good clinical history, a good clinical record and laboratory analyses—the *x*-ray screen and plate give data which are too often inadequate and insufficient for the requirement of intelligent treatment. Separate items of diagnosis, such as Lane's kink, a ptosis, etc., are not enough.

The amount of hydrochloric acid or its absence in the stomach is of more importance, to the internist, than the picture of a gastropsis. The surgeon requires more than a filling defect, and an arrested peristaltic wave to assure him of a carcinoma of the stomach. The clinician will continue to use his ear for the first signs of tuberculosis. But let not the consulting room of the internist, the laboratory and the *x*-ray room become chambers of discord.

The diagnostician without the *x*-ray is blind; but he who is without the stethoscope and the percussion hammer is deaf. Let not the deaf argue with the blind, for such is without profit. But let the deaf put away their deafness and the blind put away their blindness. Then will a miracle come to pass: the art of diagnosis will have a new birth.

## CIRSOID ANEURYSM OF THE HAND

MAX BALLIN, M.D.

DETROIT

The following case of peculiar blood-vessel affection is so singular as to be worthy of publication. It is one of the rare cases where an exaggerated growth of blood-vessels leads to a condition almost malignant.

The literature on this subject shows very little explanation of this peculiar process. The most explanatory article on cirroid aneurysm is by E. Burci,<sup>1</sup> in a study of "Cirroid Aneurysm," claims that cirroid aneurysm is formed by a considerable dilatation and tortuous elongation of veins that will also become pulsating through a certain degree of dilatation and hypertrophy of capillaries, and finally through a slight degree of dilatation of the arteries, in whose walls, in time, no hypertrophis but regressive obliteration occur.

In the following case the cause of the formation is somewhat different, by reason of the fact

1. La Clinica Moderna Nr. 1, 1906.



that from the first a pulsating communicating tumor between arteries and veins had taken place.

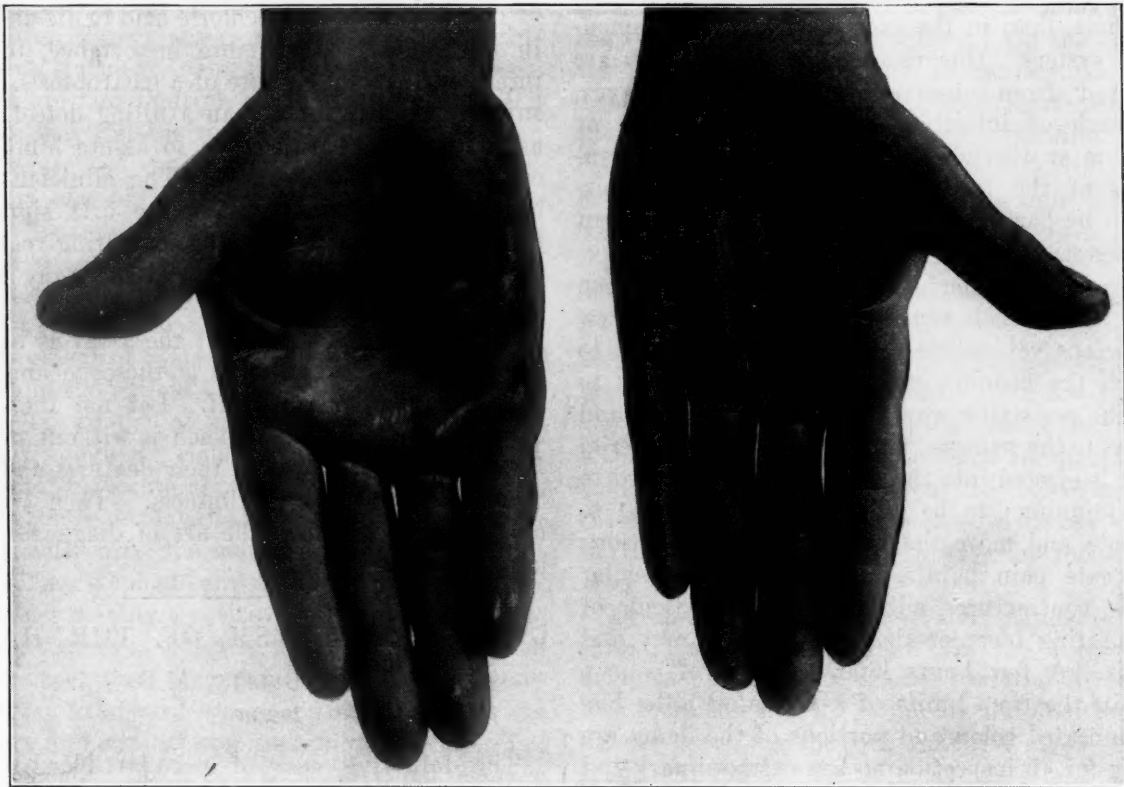
The case, through the accompanying illustrations, will explain this fact.

Mr. Fred H., 30 years old, steamfitter, had always enjoyed best of health; never used alcohol to any extent; and gives no history of any infection.

*History.*—On Aug. 11, 1911, he tried to stop a sliding steel casing with his right hand, the mass of steel hyperextending the hand at the carpal joint with great force. He felt a sharp pain and noticed, the next day, the veins on the

with splendidly developed muscles. The right hand is very much swollen, especially on the ulnar side. The swelling is not of an edematous character, but seems to be caused by overfilling with blood; the hand perspires very freely, especially on the little and the ring finger; swelling extends somewhat on to the forearm. The back of the right middle hand shows marked varicose veins, which extend on volar side into hypothenar region and little finger. The veins showed slight pulsation. (See Fig. 1.)

Flexion of hand and finger is painful; patient complains of throbbing pain in ulnar part of



Figs. 1 and 2.—Appearance of hand, note swelling of hypothenar and dilated veins.

dorsum of the injured hand were very much swollen. In the next few weeks, pain in the hand and, objectively, the swelling of the veins, were the most marked symptoms present. The swelling of the veins on the dorsum of the middle of the hand was so marked that the attending physician excised some of them, considering them to be merely varicose veins. But the swelling of the veins returned immediately and extended slowly to the little finger and on the palmar side into the hypothenar region; the hand was swollen, perspiring profusely and causing intolerable pain.

*Examination.*—When I saw the patient first in consultation, on April 3, 1912, seven months after the accident, the following findings were noted: General appearance, healthy looking man

hand; it keeps him from sleeping.

On palpation, I noticed a pulsation of the swollen hypothenar; by auscultation a loud bruit could be heard over the whole hypothenar region, extending along the ulnar artery two inches above the wrist. The bruit was loudest in the middle of the hypothenar region, being synchronous with the pulse. Elevation of the arm diminished the pain and the bruit. Compression of the brachial artery stopped all the symptoms, which returned immediately on the cessation of the compression. Measurement of the left hand around the palm was 8 inches, the right measured 9 inches.

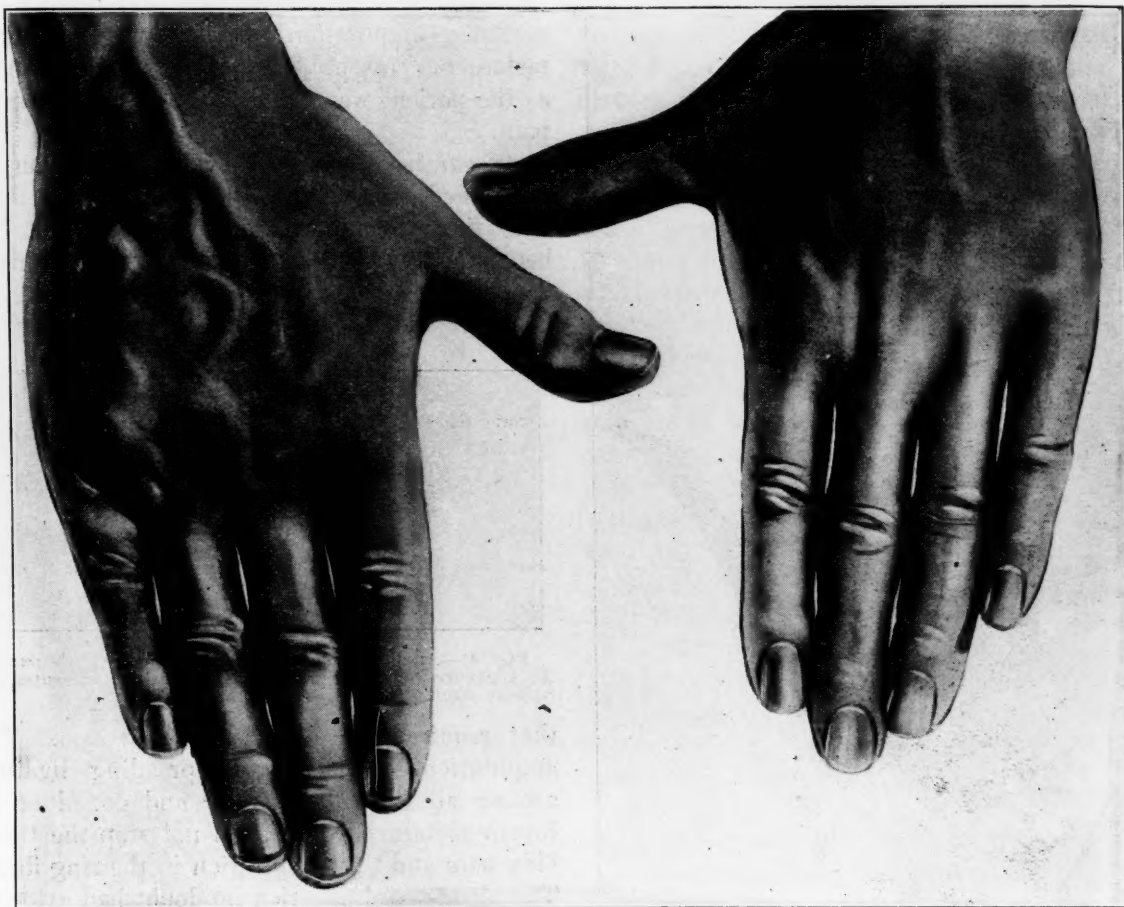
*Diagnosis.*—From these symptoms, the diagnosis of an aneurysm of the superficial end-branch of the ulnar artery with venous com-

munication was obvious. The aneurysm, from the record, should be classified as a traumatic one.

*Symptoms.*—The symptoms were classical: the pulsating tumor, the bruit—so loud as to be a real auscultatory treat—the relief of the symptoms by compression, justified the diagnosis of aneurysm; the overfilling and slight extension of the pulsation into the veins warranted considering the aneurysm as one of arteriovenous type.

A radiogram of the hand, taken at the same

rysmorrhaphy was not thought advisable, as the sac was too thin for any suture, and the excision of the sac was performed. The sac extended above the wrist into the ulnar artery, which was ligated about an inch above the carpal ligament, where it seemed to be of normal caliber. Then the sac in the palm was dissected out; it no doubt was formed by the ulnar part of the superficial palmar arch and had three or four communications, one of which seemed to lead into a vein; all were ligated. The wound was closed



Figs. 1 and 2.—Appearance of hand, note swelling of hypothenar and dilated veins.

time, showed a marked erosion of the fourth metacarpal bone and the phalangeal bones of the little and ring fingers, just as an aortic aneurysm erodes the sternum and ribs. (See Fig. 2.)

Patient readily accepted our proposal to ligate or excise the aneurysm.

*Operation.*—Operation was performed on April 10, 1912. Under Esmarch-anemia, a longitudinal incision was made over the course of the ulnar artery, from one inch above the wrist, over the whole hypothenar, down until the aneurysmal sac was encountered. The ulnar nerve was freed and pushed aside. The bluish sac was very thin, no fibrous tissue being thrown out around it (as is usual in aneurysm); therefore, a Matas aneu-

tightly by deep and superficial sutures; the dressing supported by splint.

The specimen (see Figure 3) shows a sac formed by a blood-vessel, three inches long, dilated in three places; the sac communicates with other blood-vessels.

*Post-Operative History.*—The wound healed by first intention; the patient left the hospital on April 16, 1912; all symptoms, pain, throbbing, perspiration, having been relieved. This condition continued until May 3, 1912; that is, for nearly four weeks after the operation, when patient declared the pain and perspiring had suddenly come back during the night. We could again notice a slight pulsation and dilatation of

the dorsal veins, that increased rapidly, and on May 5, a bruit could again be clearly heard over the dorsal end-branch of the radial artery. For the next week compressive bandages were tried, only to give temporary relief, lasting only as long as the compression was kept up.

On May 13, 1912, under local anesthesia, the end-branch of the radial artery was ligated immediately over the wrist, proximal and distal to a slightly dilated sac-shaped part. This again gave relief of symptoms for about three or four

point where auscultation and palpation showed the loudest bruit.

*Subsequent History.*—During the early part of October, the whole ulnar side of the hand, including the hypothenar region and little finger, also the ulnar side of the fourth finger, consisted of a big mass of overfilled, throbbing veins. The hand was perspiring freely, looked bluish and the flexion of the fingers was very limited, owing to pain. The whole region mentioned seemed to be taken in by this pulsating mass of blood-vessels. As extension into the ring finger was rapidly progressing, amputation of little finger with its metacarpus was proposed and willingly accepted, as the patient was unable to sleep on account of pain.

*Amputation of Finger.*—The amputation was performed on Oct. 12, 1912. The little finger with the whole metacarpus was removed. The hemorrhage was most profuse, and the Esmarch bandage had to be replaced several times. No doubt we had to deal with large cavernous spaces

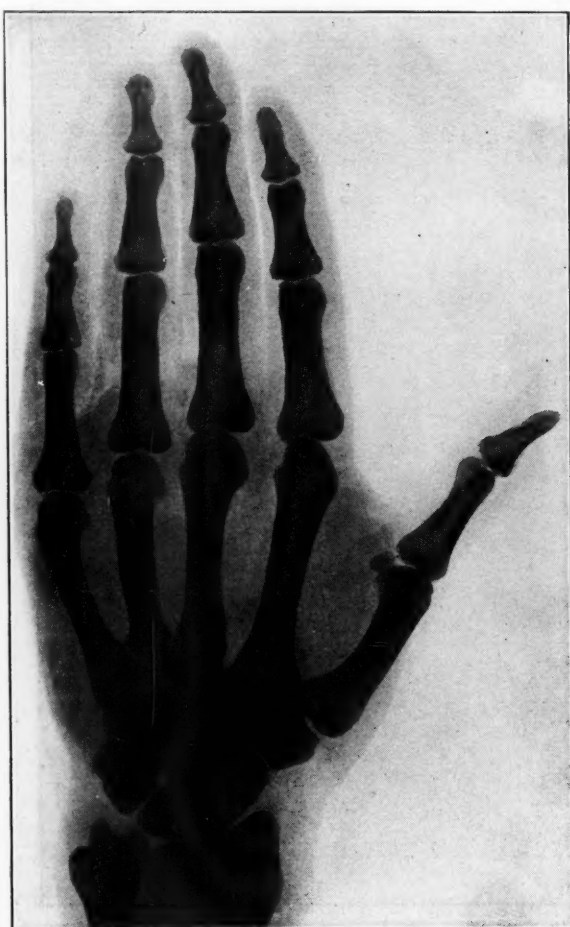


Fig. 3.—Radiogram, showing erosion of fourth metacarpal and phalangeal bones of little finger.

weeks, then all the symptoms returned again.

On June 10, 1912, we again ligated a communicating pulsating branch of the radial vein between the head of the first and second metacarpal bones; excising all the dilated veins around this part of the artery.

On June 25, a similar excision of blood-vessels and mass-ligature of the dilated veins was performed on the volar side, between the fourth and fifth metacarpals.

On July 20, and August 31, two more ligatures were applied on the radial system.

All these operations always gave relief for only a short time. The ligations were done at the



Fig. 4.—Aneurysmal sac excised, injected with paraffin. A. Ligature on ulnar artery. B. Ligature on superficial palmar arch. C. Venous communication.

that required large ligatures *en masse*. This amputation, with its widespread ligatures around all the vessels, volar and dorsal of the fourth metacarpal bone, did not stop the throbbing pain and the perspiration in the ring finger. The blood-vessel affection no doubt had extended beyond the field of amputation. The dilated veins persisted all over the dorsum of the hand, and even the superficial ulnar vein was enlarged to a large varicose vessel above the elbow. A bruit was still present over the volar side of the wrist, midway between radial and ulnar arteries.

*Microscopy.*—The specimen from the little finger gave the following microscopical findings: The blood-vessel tumor consists of a mass of large dilated veins (just like *corpus cavernosum*); no malignancy. (On account of progressiveness of infection, angiosarcoma was naturally expected.) The muscles show extensive centers of necrosis and atrophy of tissues. (Trophic changes.)

*Further Course.*—On Nov. 21, 1912, Dr. J. B. Murphy of Chicago, saw the patient with me, to



decide the question of amputation of the forearm. His advice was to ligate once more, at the point of most audible pulsation, mentioned above, midway between ulnar and radial artery, two inches above the carpal ligament; and if not successful, to amputate at the forearm, considering that the blood-vessel affection was rapidly progressive and



Fig. 5.—Radiogram of amputated hand, blood-vessels injected with red lead. Note A. Point of ligature on radial artery. B. On ulnar artery. C. Cirroid course of arteries; also the normal digital arteries on index and thumb, but encroaching of blood-vessel tumor on to the base of all fingers.

may finally get beyond control, beyond the shoulder.

According to his advice, on Nov. 24, 1912, I dissected through a longitudinal incision down through the flexor tendons and encountered at the point mentioned a dilated arterial sac, which no doubt communicated with some large vein. (The operation was done without Esmarch, a

temporarily applied digital compression of the brachial artery allowing inspection of the pulsation when necessary.) The dilated part was excised, the communication ligated.

This operation gave decided relief again, for a few weeks. To show how seriously the affection interfered with the patient's general health, in the first two weeks after this operation, the patient being free from pain and able to sleep, gained twelve pounds in weight.

*Amputation of Forearm.*—On Dec. 23, 1912, the return of the cavernous mass into the ring and middle finger with all the distressing symptoms was obvious. On Jan. 3, 1913, a severe hemorrhage occurred from a small granulation remnant from the amputation of the little finger, no doubt the granulation had grown into the cavernoma, or *vice versa*. Therefore, the necessity of amputation of the forearm became imperative, and was performed on Jan. 13, 1913, from which operation the patient made an uneventful recovery, and is well up to the present time.

The blood-vessels of the amputated hand were, immediately after the operation, injected with a mixture of red lead and wax, through the ulnar artery, and a radiogram taken afterward gave this most wonderful picture, shown in Figure 4, which shows how justifiable the final amputation was.

*Pathological Findings.*—Dr. A. S. Warthin of Ann Arbor, Mich., was kind enough to examine the specimens, and reports: "The vessels have greatly dilated lumina and much thickened walls, showing that the vascular changes must be of some chronicity, probably congenital, the condition developing after trauma, as has been observed in a number of cases of this rather rare and interesting condition."

#### BIBLIOGRAPHY

Seidener: A Rare Case of Angion-cavinous Tumor Following Trauma. *Quang-Diss. Muench.* p. 910.

Onachi, D.: Thirty-eight Cases of Traumatic Venous-arterial Aneurysm, Following Bullet Wounds. (From the Japanese.)

Van Oppel: A Case of Arterial-venous Aneurysm of the Axillary Artery, Also a Case of Arterial-venous Aneurysm of the Carotid Artery. *Archiv. f. Chir.*, 1908, lxxxvi, p. 31.

#### HYPOTENSION AND HYPERTENSION; THEIR MECHANISM AND THERAPEUTICS \*

THEODORE A. MCGRAW, JR., M.D.

DETROIT

Pathological increase and decrease in blood-pressure are, it should be understood, symptoms of disease; not the disease itself. So that in discussing hypotension or hypertension, we will

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consider these conditions in their relation to the principal diseases in which they occur.

The maintenance of arterial tension may be said to depend on two major factors: cardiac force and peripheral resistance; and on two minor factors: the elasticity of the arterial wall and the volume of blood in the vessels. That subnormal pressure always depends on a disturbance of one or more of these four factors, may, I think, be accepted as true.

#### HYPOTENSION

Hypotension, or subnormal blood-pressure, is found as a symptom in a variety of pathological conditions, and Janeway<sup>1</sup> has classified the latter as follows:

1. In wasting diseases as in advanced phthisis and in cancer.
2. After the use of vasodilator drugs.
3. In infectious diseases.
4. In terminal conditions.
5. In hemorrhage.
6. In collapse and shock.

The hypotension seen in such cachectic states as cancer is due undoubtedly to a disturbance of at least three of the four factors in maintaining tension: cardiac energy, peripheral resistance and the volume of blood in the vessels. The diminution in these three physiological processes is simply one expression of the very low state to which the body comes in such diseases.

Hypotension resulting from the administration of vasodilators—the nitrite group—is due in great part to the dilation of the splanchnic vessels; that resulting from chloroform anesthesia, first to depression of the vasomotor center, and later to diminished cardiac energy.

It is, however, in the infectious diseases especially that the greatest strides have been made in the study of hypotension. In tuberculosis a subnormal pressure is almost constant. I cannot do better, I think, than to quote the conclusions of Emerson,<sup>2</sup> who based his work on a study of 200 tuberculous cases. He says:

Hypotension is universally found in advanced tuberculosis, in which condition emaciation may play a part in its causation. Hypotension is found in almost all cases of moderately advanced tuberculosis or in early cases in which the toxemia is marked, except when arteriosclerosis, the so-called gouty diatheses, chronic nephritis or diabetes complicate the tuberculosis and bring about a normal pressure or hypertension. Hypotension in tuberculosis increases with the extension of the process; recovery from hypotension accompanies arrest or improvement. Prognosis can be as safely based on alteration in blood-pressure as on changes in pulse or temperature. The causes of hypotension in tuberculosis are probably primarily a toxic action on

the vasomotor center in the medulla, allowing of a vasoparesis or stimulating an active vasodilatation, and secondarily progressive cardiac atrophy or degeneration. The results of hypotension in tuberculosis or in any other condition is insufficient capillary pressure, more or less venous stagnation and insufficient nourishment, with resulting atrophy or degeneration of the essential organs of the body.

As an additional factor in the causation of hypotension in phthisis Pottenger<sup>3</sup> cites the diminished action of the diaphragm which causes splanchnic congestion, since the usual suction action on the veins, which is normally induced by the diaphragmatic excursion is diminished or lost.

Within the past two or three years hypotension in pneumonia has been studied quite extensively. The low pressure in this disease may be ascribed to the action of the toxins on the vasomotor center, the walls of the vessels themselves, and, in more severe cases, to diminished cardiac energy. Gibson<sup>4</sup> of Edinburgh formulated this rule which clinical evidence seems to verify: When the arterial pressure expressed in millimeters of mercury does not fall below the pulse-rate expressed in beats per minute, the prognosis is good. The converse is also true.

In scarlet fever, the toxemia exerts its influence in lowering pressure. The extent and the duration of the hypotension vary in direct proportion to the severity of the attack. The tension is usually lowest during the second week and usually reestablished by the fourth weeks.<sup>5</sup> Complicating nephritis may or may not show hypertension; the presence of hypertension points to renal involvement; its absence does not deny it. In typhoid and diphtheria, low pressures are usual. In Addison's disease it is also the rule; due, it is believed, to adrenal insufficiency and therefore to a lack of normal pressor substance in the circulation. Antemortem pressure may give very low readings; in a case of diabetic coma seen a few days ago I found shortly before death a systolic pressure of 48; diastolic, 40; pulse pressure, 8. Hemorrhage and shock must be mentioned as causes of hypotension, but, as surgical conditions, do not come within the scope of this paper.

#### TREATMENT OF HYPOTENSION

The treatment of hypotension is, of course, directed toward the cure or improvement of the disease in which it is a symptom. The subnormal pressure in wasting diseases rarely, I think, demands direct treatment; a rise of pres-

1. Janeway: Clinical Study of Blood-Pressure.  
2. Emerson: Arch. Int. Med., April, 1911.

3. Pottenger: New York Med. Jour., Aug. 31, 1912.  
4. Gibson: Glasgow Med. Jour., May, 1911.  
5. Rolleston: Brit. Jour. Child. Dis., Oct. 19, 1912.

sure will accompany improvement in the causative disease, whether it be accomplished by hygienic, medicinal or operative measures.

In tuberculosis, fresh air, abundant nourishment, moderate exercise and sufficient rest will elevate the low pressure in just that proportion that they improve the disease. Hoobler,<sup>6</sup> who studied the effect of cold fresh air in tuberculosis of children and young adults, found that with the transfer of the patients to open air there was a gradual rise of pressure within one to two hours; that if the patient was kept in the open air, the pressure remained higher, but was reduced again on going indoors. He also found that the more advanced the case, the lower the pressure indoors and the greater the rise in the open air. Practically the same results were attained with the open-air treatment of pneumonia.<sup>7</sup>

We have said that in pneumonia the fall in pressure may be due to either vasomotor or vascular causes or to the weakening of the heart muscle in addition. For the purposes of treatment it is important to know which condition predominates, and here the pulse-pressure may give us some indication; a high pulse-pressure, i. e., a great difference between the systolic and the diastolic pressures, points to vascular insufficiency; a low pulse-pressure suggests the failing heart. In the first instance, vasoconstrictors are indicated; if given in the last, the increased resistance may fatally overburden the already weak heart.

As a vasoconstrictor epinephrin (adrenalin) has perhaps the first place; its effect being chiefly due to direct action on the muscular coats of the peripheral arterioles.

Pituitary extract has much the same action, but the effects are more prolonged. Ergot is also used for the same purpose. Subnormal pressure from failing cardiac force calls for digitalis, strychnin or caffein.

#### HYPOTENSION CONCLUSIONS

To sum up:

1. Hypotension is usually the result of lowered peripheral resistance or diminished cardiac force or both.
2. Its treatment should be directed primarily toward that disease in which it appears as a symptom.
3. When it is necessary to treat hypotension directly we must decide whether the vascular system or the heart is the chief offender; to this

the pulse-pressure may give us the necessary clue.

4. If the heart is failing, vasoconstrictors should be used with great caution or not at all.

#### HYPERTENSION

The highest blood-pressures have been recorded in cases of acute intracranial tension, as in apoplexy, fracture of the skull or in rapidly-growing brain tumors; in such cases a cerebral anemia of greater or lesser degree, caused by the increased pressure on the cerebral vessels, occurs. The mechanism is interesting: the vasoconstrictor center is stimulated by its anemia; the arterial vessels, including the splanchnic system—that great potential blood-reservoir—contract; the heart is stimulated to greater effort, the pressure rises, and the anemia of the vital centers is temporarily relieved. As the intracranial tension rises the stimulus to the constrictor center increases and the blood-pressure rises again to keep pace. In fatal cases, the center finally becomes exhausted, the blood-pressure falls and death from asphyxia ensues.

The hypertension occurring in arteriosclerosis has naturally quite a different origin. It is now believed, partly as the result of animal experiments and partly from clinical experience, that in a fairly large percentage of cases arterial disease is the *result* as well as the cause of hypertension. In such cases prolonged hypertension produces sclerotic arterial changes, which in turn help to maintain the hypertension; thus a vicious circle is established.

Persistent over-eating and drinking, excessive and prolonged daily mental or physical strain are among the factors in the causation of the original hypertension; in such cases toxins, called pressor substances, circulating in the blood cause a spastic contraction of the vessel walls and this in turn elevates the blood-pressure. When the sclerotic changes appear the hypertension becomes more permanent depending as it does on loss of arterial elasticity as well as on vasomotor spasm. Hypertrophy of the left ventricle is the natural result of this extra work.

Not all cases of arteriosclerosis show hypertension. You will find cases in which the palpable arteries are hard and tortuous with normal or subnormal pressure. This seems to depend on the location and the extent of the arterial involvement. Janeway<sup>8</sup> says: "Arteriosclerosis leads to hypertrophy of the left ventricle only when the splanchnic arteries or the aorta above the diaphragm are highly diseased. The arterio-

6. Hoobler: *Am. Jour. Dis. Child.*, November, 1911.

7. *Ibid*: May, 1912.

8. Janeway: *Clinical Study of Blood-Pressure*.



sclerosis of the remaining vascular districts does not appear to exert this influence." Possibly, in some of these cases, the arterial change is so marked that vasomotor spasm does not contract the vessels. It is in the senile type of arteriosclerosis that hypotension sometimes is seen; here the heart is small and its muscle flabby.

Elliott,<sup>9</sup> writing on hypertension, thinks that the hypertension in arteriosclerosis depends on toxemia rather than on arterial degeneration. That were this not the case we would expect to get higher pressure readings in senile calcification of the arteries. For the same reason we might anticipate higher pressure values in arteriosclerosis than in chronic nephritis, because of the more essentially vascular character of the former disease.

Angina pectoris usually shows a high blood-pressure during the attack. This is probably due to a combination of the vasomotor spasm which affects the whole arterial system as well as the diseased coronaries, and, of the severe pain which is a well-known factor in elevating pressure. Many cases have, of course, hypertension to start with as a symptom of the accompanying arteriosclerosis. In fact, it is hard to explain the few reported cases of angina without hypertension.

There is no pathological condition in which hypertension is so constant a factor or in which the pressure averages so high, as in chronic nephritis—always excepting acute intracranial tension and possibly angina during the attack. For, with those two exceptions, a blood-pressure over 200 mm. is most suggestive of nephritis. Arteriosclerosis without renal involvement rarely shows that pressure. It is in the interstitial variety of nephritis that the highest tensions are seen.

The theories explaining rise of blood-pressure in nephritis have undergone considerable modification in the past two or three years. It was at first considered that the hypertension was due entirely to mechanical causes; that is, to the reduction in renal circulation due to the anatomical changes in the kidney, which demanded and obtained a higher pressure to overcome the increased resistance ahead. Later observation, however, showed that hypertension exists where there has been only slight renal involvement, and that dogs, having both renal arteries partially obstructed, showed no increased tension.

Janeway,<sup>10</sup> in a recent article, reviews the present ideas as to hypertension in nephritis. They are, briefly, as follows: It is due to (1) increased viscosity of the blood; (2), to the

presence in the blood of so-called pressor toxins which stimulate the vasoconstrictor center. One theory being that the pressor substance is derived from the degenerating kidney, another that it is adrenalin in the blood due to overactivity of the suprarenal glands. Janeway believes, that while pressor toxins are the cause of hypertension, they are not derived from either of the above sources. The whole subject is as yet, a very obscure one. High pressures in uremia and eclampsia are undoubtedly of toxic origin. In lead-poisoning it is probably a combination of toxemia, arterial change, and during the colic, of pain.

#### TREATMENT OF HYPERTENSION

If we are in accord with the premises laid down in the opening paragraph of this article—namely, that hypertension is a symptom, not a disease—we must also admit that the treatment of hypertension should be primarily the treatment of whatever disease of which it is a symptom.

Hypertension is in many cases—some say in all cases—a compensatory condition, and in such cases indiscriminate and too great lowering of pressure by drugs or by electricity is as dangerous and as foolhardy as the attempt would be to reduce cardiac compensation. This principle can be well demonstrated in considering the treatment of our first cause of hypertension, increased intracranial pressure.

Here it is obvious that endeavoring to lower pulse tension by prescribing vasodilators, would, should it succeed, put just that much more strain on a laboring heart. The treatment is, of course, reduction of the intracranial tension by operation; treating the disease not the symptom. The only medical treatment possible and one only to be used in an inoperable case would be the "administration of large doses of atropin, hoping thereby to paralyze the vagi, increase the heart's frequency and thus allow a more easy rise of pressure."<sup>11</sup> Lumbar puncture might be worth trying, with the hope thereby to reduce the intracranial pressure.

In considering the treatment of high blood-pressure in incipient or in well-developed arteriosclerosis, we have a more complicated subject. We have said that prolonged hypertension breeds arterial disease; that that kind of hypertension is induced by over-work, mental or physical, but especially by over-eating and drinking, habits peculiarly characteristic of the American people. It has been noted by men doing blood-pressure work that higher pressures are as a rule found

9. Elliott: *Am. Jour. Med. Sc.*, July, 1910.

10. Janeway: *New York Med. Jour.*, Feb. 22, 1913.

11. Hirschfelder: *Diseases of Heart and Aorta*, edition 1.

on Monday morning, a result of Sunday's dietary indiscretions! This kind of hypertension may also be compensatory in character; i. e., increase of pressure to meet the demand for increased elimination. In these incipient cases the treatment must here again be directed toward the cause.

A general reduction in diet, especially in proteids, for the products of proteid metabolism seem especially apt to act as pressor toxins. Elimination of alcohol, of course, but also a reduction in all fluids ingested; this for two reasons: to stop overfilling the blood-vessels and to aid in the reduction of food intake. A salt-free or partially salt-free diet will also help in this particular. A sufficient amount of gentle, graded exercise, preferably walking, bathing to stimulate skin elimination, good intestinal evacuations and a let-up from mental strain will go far in preventing these incipient cases from developing into full-fledged arteriosclerosis.

We have seen that hypertension in developed arterial disease is a combination of spastic arterial constriction and of anatomical arterial change. For the first factor, the treatment outlined for incipient cases may well be applied. For the latter potassium or sodium iodid have long been prescribed. Whether the iodids exert any influence on the sclerosis, except possibly in specific cases, is very doubtful. They are, perhaps, a harmless means of keeping the pressure within safe limits and good results are frequently reported.

In acute attacks of high tension—the so-called vascular crises in which there is sudden vertigo, dyspnea and headache with slight precordial pain or perhaps severe angina develops, the vasodilator drugs are of the greatest use in tiding the patient over. Amyl nitrite, nitroglycerine and erythrol tetranitrate are most frequently used. They should, however, be supplemented with rest in bed and a mercurial and saline purge, and perhaps in severe cases venesection or a hot pack.

It is much better, I believe, in maintaining blood-pressure at safe and comfortable limits, to rely mainly on dietary and physical measures and to keep our drugs for the emergencies. In certain cases where very high pressures do not yield to diet and hygiene, small and repeated doses of nitroglycerine or of the nitrites may be indicated; but the patient should be under constant observation and the blood-pressure and the urinary output carefully watched.

What has already been said about the treatment of high tension in arterial disease is equally

applicable to chronic nephritis. Hypertension is undoubtedly a normal condition in nephritis. If it is not giving symptoms and does not rise beyond what may be considered safe limits for that particular disease and patient, it should not be interfered with. Headache, vertigo, insomnia, those harbingers of uremia, may best be treated with rest in bed, attention to diet and bowels, hot packs and perhaps small doses of nitroglycerine, which is sometimes followed by gratifying diuresis. In other words, treat the toxemia, the cause, not the hypertension, the symptom.

A word should be said about the treatment of hypertension by the high frequency current. It has been proved beyond doubt that this form of electricity will reduce most forms of hypertension promptly from 10 to 70 mm., and if applied frequently, the pressure may be permanently kept low. There is considerable controversy concerning this method between the internists and the electro-therapeutists; the argument resolves itself into the question of when hypertension is compensatory and when it is not, for both sides now admit that high frequency should not be used to reduce purely compensatory high tension. Snow<sup>12</sup> of New York, one of the leading electro-therapeutists, thinks that only "in parenchymatous nephritis, in cirrhosis of the liver, or whenever incidental resistance other than hypertension is present in the path of the circulation" is hypertension compensatory. Internists, on the other hand, hold more to the views expressed elsewhere in this paper—that most all hypertension is more or less compensatory, so that the genuine indications for lowering tension by high frequency are few and far between.

It seems to me that what has been said about the use of vasodilator drugs holds true concerning high frequency; that if used, it should be regarded only as an adjunct to dietary and hygienic measures and then with great caution and with careful blood-pressure control.

#### CONCLUSIONS ON HYPERTENSION

To sum up on hypertension:

1. It is a symptom not a disease; so treatment should be directed toward the disease in which it appears.
2. It is usually compensatory and it is better to reduce it indirectly than by direct dilation of the arteries.
3. When it is necessary to lower tension directly as in angina or in threatened apoplexy, the blood-pressure should be carefully controlled

<sup>12</sup> Snow: Med. Rec., Dec. 16, 1911.

by frequently taking records of the pressure, which should not be lowered beyond what may be considered normal limits for that particular disease. And finally

4. Indiscriminate prescribing of vasodilator drugs in every case of high pressure regardless of indications, is to be soundly condemned.

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## THE USE OF THE SPHYGMOMANOMETER IN GENERAL PRACTICE \*

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DETROIT

More than a hundred years elapsed from the time of Harvey's discovery of the circulation of the blood, before Hales, in 1733, demonstrated the fact of blood-pressure. In 1828, Poiseuille invented the mercurial manometer in the form of a U-shaped tube, and discovered the usefulness of a saturated solution of sodium carbonate in preventing the coagulation of the blood in the system of tubing used to connect directly with the artery of the animal in experimentation. Ludwig, in 1847, invented the kymographion, by means of which a graphic record secured by having a needle trace on a revolving smoked drum, was obtained. From that time on until 1896, when the Riva Rocci and Hill instruments were devised in which an encircling armlet enclosing an inflatable rubber bag, connecting with an inflating mechanism, which was in turn connected with a system of tubing in which a mercurial manometer was incorporated, various attempts were made, but without success, to obtain a satisfactory clinical instrument. These latter instruments proved satisfactory, but it was soon found that the armlet must be at least 12cm. in width to give accurate results.

Various makes of instruments are now on the market. The one I personally prefer is the Mercer, an inexpensive, portable and easily manipulated form of the mercurial type; and, as other forms are standardized by means of mercurial manometers, I carry it, although it is a little heavier than the dial type which is well represented by the Tycos. This instrument is light, takes up little space, and is accurate, but should be tested every so often by one of the mercurial type.

Two methods may be used in determining the pressure: the palpatory and auscultatory. In the first method, after the proper adjustments are made, the mercury column is run up until the

radial pulse is obliterated, and then the air gradually released until the pulsations in the artery are perceived; this gives us the systolic point of pressure or maximum pressure, occurring when the aortic valves are open and just after the beginning of ventricular systole; it gradually diminishes to a minimum point, or the diastolic pressure, when the valves are closed and just before the beginning of the ventricular systole.

The walls of the vessels being most yielding at the diastolic point, we get greater oscillations in the column of mercury, or in the movement of the needle of the dial at this point. In many cases with the mercurial manometer, the diastolic point cannot be determined by inspection in this way, while in practically all cases it can be discovered with a dial instrument. In using the mercurial instrument some other way must be adopted. Korotkow,<sup>1</sup> in 1905, devised the auscultatory method, which has been quite generally adopted, and is the method I use.

Instead of palpating the artery below the compressing cuff, we apply the bowl of the stethoscope to the brachial artery at the bend of the elbow, and as we listen we allow the mercury column to run down from above the systolic point. Five phases can be made out as we reach the systolic point: 1. A sound not unlike the first cardiac sound; 2, this same sound plus a hissing murmur; 3, the murmur disappears and only the sound is heard; 4, the sound becomes suddenly very much muffled; 5, at the diastolic point is disappears. The average length of each phase, in order, is 14, 20, 5, 6 mm., a total of 45 mm. of pulse pressure as the difference between the systolic and diastolic points is termed. By adding one-third the pulse pressure to the diastolic pressure we get the mean pressure. For young adults, in the reclining posture, the average blood-pressure is maximal 110 mm., minimal 65; pulse pressure 45 mm. In general, the limits in normal individuals at rest are maximal 110 to 135 mm., minimal 60 to 90 mm., pulse pressure 30 to 45 mm.

### FACTORS IN BLOOD-PRESSURE

There are four principal factors in the production of the blood-pressure: the muscular power of the heart (the vis a tergo), the elasticity of the vessel walls, the peripheral resistance and the volume and viscosity of the blood in circulation; all of which must be taken into account in pathological conditions.

During sleep there is a marked fall of blood-pressure, varying from 6 to 44 mm.,<sup>2</sup> the slight-

\*Read before the Wayne Co. Medical Society, March 10, 1913, and Gratiot County Medical Society, Sept. 5, 1912.

1. Korotkow: Quoted by Norris: Internat. Clin. Ser. XXI, Vol. iv.

2. Brooks and Carrol: Jour. A. M. A., June 8, 1912.



est drop occurring in those whose pressure were the lowest in the beginning. The maximum fall is present two hours after the onset of sleep.

Otis<sup>3</sup> made one investigation of the effect on blood-pressure of physical exercise on a group consisting of fifty-nine men, six boys and thirty-two young women. It was found, in the majority of cases that exercise, whether excessive, severe and long continued, or more gentle and moderate, causes a rise in systolic blood-pressure—the maximum occurring some time during the effort. As fatigue sets in and advances, the pressure falls to normal or subnormal. A maximum systolic pressure is reached more rapidly in the case of a fatigued individual, but it is not nearly so extensive. If the exercise ceases at a time when the increased pressure exists, which is indicated by taking it immediately on stopping exercise, the return to normal takes place rapidly, generally within a comparatively few minutes. If the exercise ceases after the fall to subnormal has occurred, then the return upward to the normal is slower. Lowsley<sup>4</sup> says: "When the subnormal phase returns to normal within sixty minutes, the exercise may be considered as well within the hygienic limit for that individual; while a return to normal that is delayed beyond 120 minutes may be regarded as exceeding that limit." We then see that this physiological test gives us definite data by which to gauge the length and severity of exercise to be prescribed for either our convalescent or elderly patients.

However, it is in the rôle of internal medicine that the widest field for the use of this diagnostic aid is presented. As to the physiological limits of the blood-pressure without exercise, we<sup>5</sup> may say that at any age a systolic pressure above 145 mm., or a diastolic above 105 mm., should excite our suspicion and direct our attention to the possible causes for these phenomena. Insurance statistics<sup>6</sup> illustrate this forcibly. Of 2,668 applicants with a systolic pressure of 140-149 mm., eighty-one deaths were expected in a given period, and there were thirty-one deaths. Of 525 applicants with a blood-pressure of 150 or over, twenty-two deaths were expected and twelve died, a percentage of thirty-five above the average mortality for the same period. Of 772 applicants not insured with an average pressure of 171 mm., twenty deaths were expected, and there were thirty-two actual deaths, a percentage almost four times greater than the average of the company. These were all between 40 and 60 years of age. A low systolic is more favorable for 300 appli-

cants with a systolic pressure of 100 and under, only three deaths occurred.

#### HYPERTENSION

Hypertension is a symptom rather than a disease. Some of the diseases or conditions causing it are the following: nephritis, gout, arteriosclerosis, emphysema, plumbism, any condition causing increased cranial pressure, convulsive conditions, angina pectoris and exophthalmic goiter. By way of illustration of the helpfulness of this procedure, a few cases may be cited:

CASE 1.—Mrs. E. R. J., was seen in consultation with another physician June 23, 1912. She had a marked mitral regurgitation of rheumatic origin. The feet and legs were edematous; there was some puffiness about the eyelids; the bases of both lungs presented crepitant râles. The urine had been examined, only a slight trace of albumin and no casts were found. The question was, whether we were dealing with simply an uncompensated heart; or, whether there was a kidney complication. On taking the blood-pressure it was found to be systolic 165 mm., diastolic 115 mm. We considered then that there must be a kidney complication. Some days later, the attending physician having left the case in my care while on a vacation, we found the urine loaded with albumin; and, coincident with it a fall in blood-pressure to systolic 125, diastolic 90, evidently due to the elimination with the albumin of a large quantity of pressor toxins.

CASE 2.—A case of arteriosclerosis in a man over 60, interstitial nephritis, who has suffered an attack of pulmonary edema, also attacks of edema of the lower extremities, formerly presented a blood-pressure running along about 160 mm. Lately, although the radials can be rolled like a cord under the fingers, his blood-pressure has fallen to 135 systolic, 90 diastolic, a change which usually occurs as the strength of the heart fails in the later stages.

CASE 3.—A case of plumbism in a young man, a painter by occupation; recently seen; gave a blood-pressure of 165 mm. systolic, with no diastolic phase.

By the latter expression, we mean that in certain cases, where using the auscultatory method, we still hear the thud with each arterial pulsation, even with the mercurial column down to zero. The presence of no diastolic phase is found in many cases of aortic regurgitation, and I have found it in a number of cases of acute infections and in typhoid fever; and, as the patient improves, the diastolic pressure will return to normal.

CASE 4.—A case of cerebral hemorrhage in a lady 55 years of age—who had a mitral regurgitation of long standing well compensated, with a blood-pressure usually 155 mm.—was found hemiplegic on the first visit, with a blood-pressure of 190 mm. In the evening, the pressure had mounted to 220 mm., and both sides were paralyzed. When next seen the blood-pressure was falling, the patient being in a dying condition.

CASE 5.—In contrast with this case, is one recently under observation in which the diagnosis was cerebral

3. Otis: *Am. Jour. Med. Sci.*, February, 1912.

4. Lowsley: *Am. Jour. Phys.*, 1911, xxvii, No. 5, p. 46.

5. Norris: *Univ. of Penn. Bull.*, April, 1908.

6. Fisher: *N. Y. Med. Rec.*, Oct. 21, 1911.

embolism and thrombosis. Some months previously the blood-pressure was systolic 145 with no diastolic phase. During this illness, when first seen, the readings were: systolic 125, diastolic 55; while February 14, the day before her death, the readings were systolic 130, diastolic 60.

CASE 6.—A case of angina pectoris presented a systolic pressure of 160 mm. with a diastolic of 100 mm.

CASE 7.—In exophthalmic goiter, a systolic pressure of 160 mm. with a diastolic of 105 mm. was seen in one case.

CASE 8.—A case recently seen with symptoms of the passage of renal calculus, with spasmodic contraction of the muscles of the extremities, gave a blood-pressure of 160 mm. systolic, diastolic 100. The following day the symptoms subsided, the blood-pressure then being 110 systolic, diastolic 75.

In pregnancy, when albumin appears in the urine, or even before its appearance when nephritis supervenes, an elevation of the blood-pressure is found, and when abnormally high the patient should not be allowed to go to full term.

#### HYPOTENSION

Hypotension, on the other hand, we find especially in those who are weak and anemic. It is a constant feature in tuberculosis and may be a premonitory symptom. In a case of pernicious anemia seen this spring, the blood-pressure was systolic 88, diastolic 68. A case of typhoid fever, now under observation, showed a systolic pressure of 95, with no diastolic phase a few weeks ago. As improvement began the diastolic rose and now stands at 60. In diphtheria, scarlet fever, measles, acute rheumatism, and in most of the acute infectious diseases the maximal pressure usually falls below 100 during the fever. Heart diseases during the acute stages generally present a low pressure; but when hypertrophy develops, a moderately high pressure prevails. Hemorrhages lower blood-pressure, and this is a differential diagnostic point in typhoid fever from perforation in which a high pressure usually develops.

#### BLOOD-PRESSURE IN SURGERY

Thoms<sup>7</sup> emphasized the importance of recording the blood-pressure together with the pulse and respiration at five-minute intervals during operations. He used the Tycos instrument. The determinations and charting are put in charge of a surgical nurse, who does nothing else. In operations below the thorax, the pulse and pressure are taken at the arm and wrist. In work on the head, neck or thorax, the determinations are readily made at the foot of the patient; placing the apparatus around the ankle and using the dorsalis pedis artery for palpation. Any cutting operation causes an initial rise. When

any of the large nerve trunks are irritated, a reflex rise occurs. When shock is becoming a dangerous factor, as shown by low blood-pressure, it is at once combated, and whether the patient reacts well after the operation can be graphically described by a charting of the pressure.

Enough has been said to show the great importance of the estimation of the blood-pressure. While it should not be considered except in relation to the other features of the disease in question, it may be the one point which, added to the others obtained by our usual procedures, may determine the diagnosis and treatment of an otherwise obscure case.

#### CONCLUSIONS

It is obvious from what has gone before that it is impossible to lay down general rules for the treatment of either hyper- or hypotension, as they are simply symptoms; and the treatment of the underlying cause is the matter of greatest importance. The key word to the treatment of conditions causing hypertension is usually elimination to get rid of the pressor toxins; while with hypotension a building up process is needed, or the direct combating of some infection.

We must necessarily conclude that no practitioner of medicine should be without a reliable sphygmomanometer. As an aid to diagnosis and as an agent to inform us of the progress of our cases, it has already been proven to be invaluable. The general improvement of the patient can be gauged by one other method in which the personal equation is eliminated—which means that a daily, or at least very frequent, taking of the blood-pressure should be performed. In this way, before elements in prognosis which can be detected by the patient and his friends become evident, the physician is cognizant of their presence, and there is nothing more satisfactory, even if the prognosis is a bad one, to the physician than to have been able to predict with certainty the outcome of a particular case. When you consider also the possibilities of differential diagnosis, as in the examples given above, between cerebral hemorrhage and embolism; between hemorrhage and perforation in typhoid fever; between a case of valvular disease of the heart without nephritis and one with the same, as well as in numerous other examples which might be cited, we believe that the use of the sphygmomanometer should be as frequent as that of the thermometer; and that in many cases the information gained by the former will be much more valuable than by the latter.

#### ADDITIONAL REFERENCES

Janeway: The Clinical Study of Blood-Pressure.  
Hirschfelder: Diseases of the Heart and Aorta.

7. Thoms: Surg., Gynec. and Obst., Vol. xiv, No. 1.

## SPECIAL ARTICLES

### HERETOFORE UNPUBLISHED RECORDS OF THE MEDICAL SOCIETY OF THE TERRITORY OF MICHIGAN

EDITED BY  
ALPHEUS F. JENNINGS, A.B., M.D.  
DETROIT

(Continued from page 223, April, 1913)

#### CHAPTER XII.—MEETING OF 1830

"At a meeting of the Medical Society of the Territory of Michigan held at the house of Benj. Woodworth in the City of Detroit on Tuesday the 4th day of January, A. D. 1830, were present:

Dr. Stephen C. Henry, president.  
Dr. Jno. L. Whiting, vice-president.  
Dr. R. S. Rice, secretary.  
Dr. M. Chapin, treasurer.

"The president called the Society to order and declared a quorum present. The roll was called and all the members were found absent except the above."

The president read to the society a case of fractured skull successfully treated by him and a case of presentation of the arm which resulted in a spontaneous evolution of the fetus, which was placed upon the files of the proceedings of the Society."

The Society then proceeded to the election of officers for the ensuing year, whereupon the following members were elected to the offices as follows, viz.:

Dr. S. C. Henry, president.  
Dr. John L. Whiting, vice-president.  
Dr. R. S. Rice, secretary.  
Dr. M. Chapin, treasurer.  
Drs. J. L. Whiting, M. Chapin, R. S. Rice, censors.  
Dr. M. Chapin, treasurer, reported the state of the

funds of the Society, which on motion was accepted and ordered to be filed.

Dr. J. L. Whiting rendered an excuse for non-attendance at the last meeting of the Society, which was on motion accepted.

The following resolution was presented by Dr. Whiting and adopted:

*Resolved*, That the treasurer be and is hereby instructed to commence suits, when this course be necessary, against such members of this Society as are indebted for initiation fees.

On motion, resolved that Dr. J. L. Whiting be added to the committee to revise the By-Laws of this Society, appointed at the annual meeting in 1829.

At a semi-annual meeting of the Medical Society of the Territory of Michigan, held at the house of Benj. Woodworth in the City of Detroit on Tuesday the 8th day of June, A. D. 1830, were present:

Dr. S. C. Henry, president.  
Dr. J. L. Whiting, vice-president.  
Dr. R. S. Rice, secretary.  
Dr. M. Chapin, treasurer.  
Drs. J. Rice, E. Hurd, T. B. Clark, members.

The president called the Society to order and declared a quorum present. The roll was called and all the members were found absent except the above named.

Dr. J. L. Whiting introduced the following resolutions, which were adopted:

*Resolved*, That the committee heretofore appointed to revise the By-Laws of the Society be instructed to determine also what alterations are necessary in the existing statutes regulating the practice of physic and surgery within this territory, and to procure such alterations to be made, if practicable, during the present session of the legislative council, and that they make report of their doings at the next annual meeting.

*Resolved*, That Elon Farnsworth, Esq., be and he is hereby appointed attorney for this Society, and that the secretary notify him of his appointment, under seal of the Society.

Dr. J. D. Davis was proposed, balloted for and unanimously admitted a member of the Society upon his signing the By-Laws, and paying the usual initiation fee.

Then the Society adjourned.

R. S. RICE, Secretary.

#### CHAPTER XIII.—THE MEETING OF 1831

At an annual meeting of the Medical Society of the Territory of Michigan, held at the Mansion House, in the city of Detroit, on Tuesday the 11th day of January, A. D. 1831, were present:

John L. Whiting, vice-president.  
R. S. Rice, secretary.  
M. Chapin, treasurer.  
T. B. Clark, L. T. Jenny, members.

The vice-president called the Society to order and all members were absent except the above named.

The minutes of the last meeting were then read and the Society proceeded to the election of officers for the ensuing year; whereupon the following members were elected to the offices set opposite their names as follows:

Dr. Stephen C. Henry, president.  
Dr. John L. Whiting, vice-president.  
Dr. R. S. Rice, secretary.  
Dr. Marshall Chapin, treasurer.  
Drs. R. S. Rice, J. L. Whiting, M. Chapin, censors.

Lyman T. Jenny rendered an excuse for non-attendance at the meetings of the Society heretofore, which was deemed satisfactory, and on motion the fines due from said Jenny were remitted.

The committee heretofore appointed to revise and report the By-Laws reported said laws as amended, which were read, and the following resolutions adopted, viz.:

*Resolved*, That the report of the committee appointed to revise the By-Laws just read, be referred back to the same committee, who are hereby empowered to make suggestions of such further alterations, amendments or additions as to them may seem expedient, and make report of their doings at the next annual meeting. And further that the same committee be instructed to apply to the legislative council during the present session for such alteration as they may think to be requisite in the existing statutes regulating the practice of medicine and surgery within this territory.

On motion the Society adjourned.

Attest: R. S. RICE, Secretary.

At the semi-annual meeting:

Present: M. Chapin and R. S. Rice.

On this date a quorum not being present, the meet-



ing was adjourned to Tuesday the 28th day of June, present, at 10 o'clock a. m.

Attest: R. S. RICE, Secretary.

At a meeting of the Medical Society of the Territory of Michigan, holden pursuant to adjournment at the Mansion House in the city of Detroit the 28th day of June, A. D. 1831. Present:

J. L. Whiting, vice-president.

R. S. Rice, secretary.

M. Chapin, treasurer.

T. B. Clark, member.

The vice-president called the Society to order and the minutes of the annual meeting were read.

Upon the petition of Wm. Thomson, David L. Porter, Thaddeus Thomson and Ezra L. Parke, physicians and surgeons in regular standing in this Society for permission to organize a medical society in the county of Oakland;

*Resolved*, That the said Wm. Thomson, David L. Porter, Thaddeus Thomson and Ezra L. Parke be and they are hereby authorized and empowered to organize and establish a medical society in said county of Oakland, pursuant to the act, entitled "An Act to Incorporate Medical Societies, for the Purpose of Regulating the Practice of Physic and Surgery in the Territory," and that the secretary transmit a copy of this resolution to the physicians above named.

Then the Society adjourned.

Attest: R. S. RICE, Secretary.

#### CHAPTER XIV.—THE MEETINGS OF 1832-'33

At the Mansion House on Friday the 10th day of January, 1832, the day on which the annual meeting of the Medical Society should be held, pursuant to notice—there being but two of the members present, to wit: Dr. S. C. Henry, president, and R. S. Rice, secretary, the meeting of the same was adjourned to Tuesday the 17th, inst., at 10 o'clock at the place aforesaid.

Attest: R. S. RICE, Secretary.

At the Mansion House on Tuesday the 17th day of January, A. D. 1832, pursuant to the adjournment on the 10th inst., there being but two of the members present, to wit: Drs. M. Chapin and R. S. Rice, the meeting adjourned to Tuesday the 7th day of February next to meet at the place aforesaid at 10 o'clock a. m.

Attest: R. S. RICE, Secretary.

At the Mansion House on Tuesday the 7th day of February, A. D. 1832, pursuant to adjournment on the 7th day of January last, there not being a quorum of the members present the meeting was adjourned to the second Tuesday in June next. Present: J. L. Whiting, M. Chapin and R. S. Rice.

Attest: R. S. RICE, Secretary.

On the second Tuesday of January, A. D. 1833, at the Mansion House in the city of Detroit, there not being a sufficient number present to constitute a quorum of the Medical Society, the secretary and one member, to wit: Dr. M. Chapin, adjourned said meeting to the first Tuesday in February next, to meet at the same place at 10 o'clock a. m.

Attest: R. S. RICE, Secretary.

At an adjourned meeting of the Medical Society of the Territory of Michigan held at the Mansion House in the city of Detroit on Tuesday the fifth day of

February, A. D. 1833, the president declared a quorum present and called the Society to order.

The roll of members was called and all were found absent except the following, to wit:

Stephen C. Henry, president.

J. L. Whiting, vice-president.

R. S. Rice, secretary.

M. Chapin, treasurer.

T. B. Clark, member.

The minutes of the last meeting were read, after which the following officers for the ensuing year were balloted for and declared by the president duly elected, to wit:

John L. Whiting, president.

Marshall Chapin, vice-president.

R. S. Rice, secretary.

Thos. B. Clark, treasurer.

T. B. Clark, M. Chapin, S. C. Henry, censors.

Treasurer of last year made his report upon which a balance was found in the hands of the treasurer of twenty and thirty-five one-hundredths dollars. On motion of Dr. Whiting said report was accepted.

On motion of Dr. Chapin:

*Resolved*, That the committee heretofore appointed to revise the By-Laws, etc., be discharged and a new committee of two be appointed.

Whereupon the president named Dr. J. L. Whiting and R. S. Rice as that committee.

On motion of Dr. R. S. Rice, Dr. Douglas Houghton was balloted for and admitted a member of this Society upon his signing the Constitution and paying five dollars.

On motion of Dr. Chapin the Society then adjourned sine die.

Attest: R. S. RICE, Secretary.

On the second Tuesday in June, A. D. 1833, there not being a quorum of members of the Medical Society present at the Mansion House, the Society was adjourned by Dr. Chapin and the secretary to the second Tuesday in January next.

Attest: R. S. RICE, Secretary.

#### CHAPTER XV.—THE MEETINGS OF 1834-'35

At an annual meeting of the Medical Society of the Territory of Michigan held at the Mansion House in the city of Detroit on the second Tuesday of January, A. D. 1834.

The president declared a quorum present and called the Society to order. The minutes of the preceding meetings were read. The roll of members were called and all found absent except John L. Whiting, Thomas B. Clark, Douglass Houghton and R. S. Rice.

The following officers were balloted for and the president declared them duly elected for the ensuing year, to wit:

Dr. J. L. Whiting, president.

Dr. D. Houghton, vice-president.

Dr. R. S. Rice, secretary.

Dr. T. B. Clark, treasurer.

Drs. D. Houghton, T. B. Clark, R. S. Rice, censors.

On motion of Dr. Clark, Dr. Houghton was added to the committee to revise the By-Laws and procure such alterations and amendments to the laws of the territory, regulating the practice of physic and surgery as are required, and make report at the next semi-annual meeting of the Society.

Dr. Robert McMillan was proposed as a member.

Then the Society adjourned.

Attest: R. S. RICE, Secretary.

At an annual meeting of the Medical Society of the Territory of Michigan, held at the Steam Boat Hotel in the city of Detroit, on the second Tuesday of January, A. D. 1835. Present:

Dr. Houghton.  
Dr. M. Chapin.  
Dr. T. B. Clark.  
Dr. R. S. Rice.

The president being absent, Dr. Houghton as vice-president called the Society to order.

The roll was called and all the members were found absent except those above mentioned.

The minutes of the last meeting were then read and the Society adjourned to Tuesday the 20th inst., at the same place at 10 o'clock a. m.

Attest: R. S. RICE, Secretary.

Tuesday, January 20th, 1835.

On this day there not being any members present except the secretary and Dr. Houghton, the Society was adjourned pursuant to a by-law of the same to the second Tuesday in June next.

Attest: R. S. RICE, Secretary.

At an adjourned annual meeting of the Medical Society of the Territory of Michigan held at the American Hotel on the second Tuesday of June, 1835.

The Society was called to order by the president, the roll was called and Dr. J. L. Whiting, T. B. Clark, E. Hurd, H. Loomis and J. D. Davis answered to their names. The minutes of the last meeting were read, and on motion the following physicians were balloted for and admitted as members upon their signing the Constitution and paying the initiation fee, to wit: Dr. J. L. Porter, Dr. J. P. Fay, Dr. J. R. Herman, Dr. D. L. King, Dr. D. O. Hayes, Dr. E. M. Cowles and Dr. Robt. McMillan.

On motion the Society proceeded to elect their officers for the ensuing year, whereupon

Dr. J. L. Whiting was elected president.

Dr. J. D. Davis, vice-president.

Dr. R. S. Rice, Secretary.

Dr. Robert McMillan, treasurer, and

Drs. Chapin, Hoyt, Clark, Davis and Houghton, censors.

Dr. Clark stated that he was not prepared to report as treasurer in consequence of the absence of Dr. Chapin, his immediate predecessor, being absent and still retained the funds and books; but reported the amount of thirty-five dollars in the treasury in cash and some notes, the amount unknown.

Then the Society adjourned.

Attest: R. S. RICE, Secretary.

At a semi-annual meeting of the Society of the Territory of Michigan held at the American Hotel on the second Tuesday of June, A. D. 1835, the president, Dr. J. L. Whiting, called the Society to order. The roll was called and Drs. Rice, Clark, Hurd, Loomis, Davis, Fay, Herman, Hoyt, Cowles and McMillan answered to their names.

The minutes of the last meeting were read, and the Society proceeded to business.

*Resolved*, That the president be and he is hereby authorized to issue warrants on the treasury for such sum or sums of money as may be due for advertising meetings of the Society.

On the petition of Hubbel Loomis and others (see files) for the privilege of establishing a medical

society in the county of St. Joseph, ordered that the same be and it is hereby granted.

On motion of Dr. Hurd the committee heretofore appointed to revise the By-Laws of the Society were discharged. A new committee was then on motion appointed by the president to consist of five for the revision of the By-Laws to report at the next regular meeting. The said committee as named by the president were Drs. McMillan, Hoyt, Davis, Loomis and Herman. Then the Society adjourned.

Attest: R. S. RICE, Secretary.

#### CHAPTER XVI.—THE MEETINGS OF 1836-'37

At an annual meeting of the Medical Society of the Territory of Michigan held at the "Michigan Exchange" in the city of Detroit on the second Tuesday in January, A. D. 1836.

The president declared a quorum present and called the Society to order, the roll being called the following members answered to their names, viz.: Houghton R. S. Rice, Chapin, Hurd, Hoyt, McMillan and Clark.

The minutes of the last meeting were read, and the Society proceeded to ballot for officers for the ensuing year, and the following persons were elected, to wit:

Marshall Chapin, president.

D. V. Hoyt, vice-president.

R. S. Rice, secretary.

Robt. McMillan, treasurer.

Drs. Cowles, McMillan, Hoyt, Houghton and R. S. Rice, censors.

The committee appointed to revise the By-Laws of the Society reported that they had not been able to complete the task assigned them and were on motion discharged.

Dr. McMillan, treasurer, filed his report, which was accepted and ordered to be filed.

The petition of L. T. Jenny and others, physicians in regular standing, for permission to establish a County Medical Society in the County of Macomb;

*Resolved*, That permission be and is hereby granted according to the prayer of said petition to statute in such cases made and provided.

WHEREAS, A petition has been forwarded from the County of Monroe for permission to establish a county society, which petition does not appear on the files;

*Resolved*, That permission be and is hereby granted to establish a medical society in said county, upon the filing another petition, according to the statutes.

On motion of Dr. Houghton; *Resolved*, That the secretary be and he is hereby instructed to publish the names of all physicians and surgeons that have been licensed to practice the same, by this Society.

On motion of Dr. Clark; *Resolved*, That the name of J. C. White be omitted in the list to be published by the secretary of physicians and surgeons as licensed by this Society.

Then the Society adjourned.

Attest: R. S. RICE, Secretary.

Tuesday, January 10th, 1837.

On the second Tuesday in January there not being a quorum of members present, the Society stands adjourned to Tuesday next at 10 a. m. by the president, secretary and one member, present.

At an adjourned meeting of the Medical Society of the State of Michigan held at the "Michigan Exchange" in the city of Detroit.

The president declared a quorum present and called the Society to order. The minutes of the last meeting

were read and the roll of members being called the following were found present: Dr. E. Hurd, Dr. R. McMillan, Dr. E. Pitcher, Dr. M. Chapin, Dr. D. V. Hoyt, Dr. D. Houghton and Dr. E. M. Cowles.

The following officers were balloted for and the president declared them duly elected:

Dr. D. V. Hoyt, president.

Dr. R. McMillan, vice-president.

Dr. E. M. Cowles, secretary.

Dr. E. Hurd, treasurer.

Drs. M. Chapin, E. Hurd, E. Pitcher, R. McMillan, E. M. Cowles, censors.

Dr. Terry was proposed as a member.

Voted that the treasurer be directed to pay G. Whitney five dollars for publishing notice.

On motion of Dr. Pitcher voted that the treasurer be directed to collect the notes and accounts due the Society.

E. M. COWLES, Secretary.

June 13, 1837.

The semi-annual meeting of the State Society of Michigan was held at the American Hotel in the city of Detroit. Dr. J. L. Whiting was chosen president pro tem.

The minutes of the last meeting were read and on calling the roll the following members were present: Drs. R. S. Rice, E. Pitcher, J. L. Whiting, E. Hurd, D. Houghton and E. M. Cowles.

Upon the petition of Darwin Littlefield and other physicians and surgeons in regular standing in this Society for permission to organize a medical society in the county of Branch;

*Resolved*, That the said Darwin Littlefield and Hiram Alden, M. Randall, Wm. Nonechett, Thos. Calkins, be and they are hereby authorized and empowered to organize and establish a medical society in said county of Branch pursuant to the act entitled "An Act to Incorporate Medical Societies for the Purpose of Regulating the Practice of Physic and Surgery in the State of Michigan" and that the secretary transmit a copy of this resolution to the physicians above named.

Drs. H. P. Cobb, Edward Spring, Abram Sager, J. B. Scovil, G. B. Russell and Lucius Abbot he proposed and balloted for as members of this Society, and

The Society adjourned.

E. M. COWLES, Secretary.

#### CHAPTER XVII.—THE MEETINGS OF 1838-'39

At the annual meeting of the Medical Society of the State of Michigan, held at the American Hotel in the city of Detroit, on the 9th day of January, 1838. A quorum being present, Dr. J. L. Whiting was chosen president pro tem.

The minutes of the last meeting were read and the roll of members being called, the following were found present: Drs. Whiting, Pitcher, Rice, Houghton, Cowles, Spring, Russell and Scovil. The following officers were balloted for and declared elected by the president:

Dr. L. Pitcher, president.

Dr. Houghton, vice-president.

Dr. J. B. Scovil, secretary.

Dr. G. B. Russell, treasurer.

Drs. Pitcher, Rice, Russell, Spring, Scovil, censors.

Dr. Rufus B. Bement of Washtenaw, Dr. Thomas C. Adams of Lenawee, and Michael A. Patterson were proposed as members of the Society.

Drs. Rice, Pitcher and Spring were appointed a committee to report a revision of the By-Laws of this Society, and report at the next annual meeting. Resolved, that each member of this Society be requested to hand in a question on some medical subject to the president within one week from this day, and he to select some one of them for discussion at the next semiannual meeting in June next.

*Resolved*, That Dr. E. Hurd, late treasurer, be and is hereby directed to report forthwith the state of the funds of the Medical Society of the State of Michigan to Dr. G. B. Russell treasurer elect.

*Resolved*, That the thanks of the State Medical Society be presented to Drs. J. G. Cornell, of the County of Jackson, and Hiram Alden, of Branch County, State of Michigan, late members of the House of Representatives of this State, for their firmness in defending the privileges of their professional associates against the encroachments of presuming ignorance, and that disorganizing spirit which seeks to annul all vested rights, even at the sacrifice of life, as well as the rights of persons and property—admitted as honorary members of this Society, and to be notified by the secretary.

The above proceedings to be published.

J. B. SCOVIL, Secretary.

At an annual meeting of the Medical Society of the State of Michigan held at the National Hotel on the 9th day of Jan., 1839. The president having taken the chair called the meeting to order and declared a quorum present. The minutes of the last meeting were read and the roll of members being called the following were found present. Drs. Pitcher, Rice, Cobb, Terry, Spring and Scovil. The following officers for the ensuing year were balloted for and declared duly elected by the president:

Dr. L. Pitcher, president.

Dr. E. Spring, vice-president.

Dr. J. B. Scovil, secretary.

Dr. R. S. Rice, treasurer.

Drs. Cobb, Terry, Rice, Russell, Spring, censors.

The treasurer being absent no report was made by him. The following amendments to the By-Laws were submitted to the Society and adopted:

In Section 6 strike out "Territory" and insert State. Strike out all of Sections 9, 13 and 14, and in Section 18 the first three lines to the word "before," also all of Sections 21, 25 and 26. The word "five" inserted in place of three in Section 1.

The following resolutions were submitted and adopted:

1. That we deeply regret the necessity of recording on our minutes the death of our late associate and former president, Dr. M. Chapin, and that our condolences are sincerely offered to the friends and family of the deceased.

2. *Resolved*, That arrearages for fines, and the annual tax due this Society previous to this meeting, be and they are hereby remitted in full.

3. *Resolved*, That Dr. Ebenezer Hurd be and is hereby expelled as a member of this Society for improper conduct as treasurer thereof.

4. *Resolved*, That the secretary be and is hereby directed to communicate the foregoing resolution to Dr. Hurd.

5. *Resolved*, That the question published for discussion in June next be taken up at our next regular meeting. A committee of three were appointed to



report on the question for discussion in June next. Committee—Drs. Terry, Cobb and Spring. By resolution the expenses of the meeting were paid by the treasurer.

Adjourned to June next.

Attest: J. B. SCOVIL, Secretary.

At the semiannual meeting of the Medical Society of the State of Michigan held at the National Hotel on the 11th day of June, 1839, Dr. Rice, president pro tem., having taken the chair, called the meeting to order and declared a quorum present. The minutes of the last meeting were read and the roll of members being called the following were found present: Drs. Rice, Houghton, Terry, Russell, Whiting and Scovil.

Received an appeal of R. B. Chase from the Washtenaw County Medical Society, which appellant had leave to withdraw. The subject for discussion at the semi-annual meeting was postponed to January next to receive the report of the committee. Committee to report on said subject—Drs. Cobb, Terry and Sager. Adjourned to the second Tuesday in January, 1840.

#### CHAPTER XVIII.—THE MEETINGS OF 1840-'41

At an annual meeting of the Medical Society of the State of Michigan held at the National Hotel, January 9, 1840, there not being a quorum present the meeting stood adjourned to the second Friday in June.

Attest: J. B. SCOVIL, Secretary.

There being no notice given for the semiannual meeting and no quorum present the meeting stood adjourned to the second Tuesday in January.

Attest: J. B. SCOVIL, Secretary.

At an annual meeting of the Medical Society of the State of Michigan held at the National Hotel, Jan. 12, 1841, there not being a quorum present the meeting stood adjourned to the second Tuesday in June.

Attest: J. B. SCOVIL, Secretary.

At a special meeting of the State Society of the State of Michigan, pursuant to a request and notice according to the By-Laws of the same, at the office of Dr. R. S. Rice in Detroit, on Saturday, July 29, at 3 o'clock p. m., the following were present: Dr. Z. Pitcher, president, Dr. G. B. Russell, Dr. T. B. Clark and Dr. H. T. Cobb. The meeting being called to order and the By-Laws not admitting any business to be transacted other than of a special character, the Society adjourned to the regular time in January next.

R. S. RICE, P. T.

#### CHAPTER XIX.—THE MEETINGS OF 1849-'50

At a regular meeting of the State Medical Society of Michigan, held at the office of Dr. R. S. Rice, Jan. 16, 1849, the following gentlemen were elected as officers for the ensuing year:

Dr. Lima Pitcher, president.

Dr. Abram Sager, vice-president.

Dr. R. S. Rice, treasurer.

Dr. J. B. Scovil, secretary.

Drs. Terry, Cobb, Rice, Russell, censors.

On motion the following two gentlemen were elected members of this Society:

N. K. Maneates of Marshall.

Moses Gunn of Ann Arbor.

On motion the Society adjourned to Saturday, Jan. 26, 1849.

Attest: J. B. SCOVIL, Secretary.

Adjourned meeting of the State Medical Society held Saturday, Jan. 26, 1849.

Present, Drs. Pitcher, Cobb, Russell and Rice.

On motion a committee consisting of Drs. Russell, H. P. Cobb and Rice were appointed to revise the By-Laws of the Society and report at the next adjourned meeting a system of medical ethics.

On motion the Society adjourned to Saturday, March 31, 1849.

R. S. RICE, Secretary P. T.

At an adjourned meeting held March 31, 1849, there being no quorum present, the meeting adjourned to Saturday evening, April 7, 1849.

Attest: J. B. SCOVIL, Secretary.

Adjourned meeting held Saturday evening, April 7. On motion Dr. Russell was excused as one of the committee on By-Laws and Dr. Scovil added to the committee.

Adjourned to next semi-annual meeting, the second Tuesday in July next.

Attest: J. B. SCOVIL, Secretary.

At the semiannual meeting held July 2, 1849, there being no quorum present the meeting adjourned to the next annual meeting, the second Tuesday in January, 1850.

Attest: J. B. SCOVIL, Secretary.

Annual meeting of the State Medical Society of Michigan, held pursuant to notice at the office of Dr. S. R. Rice, a quorum being present. The minutes of the last meeting being read, on motion were amended so as to include and accept the treasurer's report of \$37 then in his hands.

The following gentlemen were elected officers for the ensuing year:

Dr. L. Pitcher, president.

Dr. A. Sager, vice-president.

Dr. R. S. Rice, treasurer.

Dr. J. B. Scovil, secretary.

Drs. Cobb, Russell, Terry, Rice, censors.

Treasurer's report adopted. Balance in hand, \$26.

On motion Dr. Isaac Paddock of Pontiac, and Dr. Richard Inglis of Detroit, were elected members of this Society.

Meeting adjourned to the fourth Tuesday in January, 1850, at 3 o'clock p. m.

At an adjourned meeting of the Michigan State Medical Society held January 28, the report of the committee to revise the By-Laws of this Society were received and adopted.

*Resolved*, That Drs. Tripler and Dr. H. P. Cobb be and are hereby appointed delegates to the National Convention to be held at Cincinnati in May next, and that the secretary be authorized, in the event of the said delegates, or either of them being unable to attend, to accredit others to attend in their place.

J. B. SCOVIL, Secretary.

The secretary pleads guilty of not giving notice two weeks before the semi-annual meeting, which was consequently passed by.

J. B. SCOVIL, Secretary.

At the annual meeting of the State Medical Society of Michigan, held pursuant to notice, Jan. 14, 1851, at the office of Dr. J. B. Scovil, a quorum was present. The minutes of the last meeting were read.

Drs. L. Pitcher and A. B. Palmer reported as having attended the National Convention held at Cincinnati the first Tuesday in May, 1850, and submitted the printed transactions of the association.

Received a note from Dr. J. Paddock acknowledging his election as a member of this Society. The following gentlemen were elected officers for the ensuing year:

Dr. L. Pitcher, president.

Dr. J. Paddock, vice-president.

Dr. R. S. Rice, treasurer.

Dr. J. B. Scovil, secretary.

Drs. G. B. Russell, H. P. Cobb, R. S. Rice, A. R. Terry, Abr. Sager, censors.

Treasurer's report accepted, \$26 in hand.

Drs. L. H. Cobb and W. Brodie were elected members of this Society. On motion Drs. Russell, Rice and Pitcher were appointed a committee from this Society to attend the next examination of candidates for M.D. at the university. Dr. Pitcher read an interesting paper on Delirium Tremens, supposed to be induced by an excessive use of tobacco. Adjourned to semi-annual meeting the second Tuesday in June.

J. B. SCOVIL, Secretary.

(To be continued)

## Miscellany

### DIAGNOSIS OF PERITONEAL EFFUSIONS

With the patient lying on his back in peritoneal effusions of moderate or small quantity, there is always fulness of the flanks, the degree of fulness depending not only on the quantity of fluid, but also on the relaxation and thinness of the abdominal wall. If the abdominal wall is relaxed there is always more or less flattening of the abdomen anteriorly; if the walls are tensely distended this appearance is obscured. If there is much subcutaneous fat the fulness is even more greatly obscured; edema will also obscure it.—A. McPhedran in the *Canadian Medical Association Journal*.

### AN APPLICANT FOR HOSPITAL INTERNSHIP

.....July 28, ..... 8:30 A. M.

Dr. .... Pres.

.....Hospital,

.....Mich.

My Dear Doctor .....

You having been commended to me I assure you it is with great pleasure I say few words to you. For a long time it has been impressed on my Mind I would love to get into Hospital work being healthy and Strong thank God I would work night or day both at times if needed. Pleases Doctor do you have a place for me. As I write my English Heart longs to be with YOU. I have been practicing for many years general practice. Besides being a general practiner am also a Specialist in Eye-Ear-Nose and Throat, also in the 20 diseases of

Rectum to which we are all liable and many diseases of the bladder (Optician) and pardon me when I say I am by Gods Help and hard work on my part a Pharmacist: clerked in 3 drug stores wher proprietors not registered. Please doctor do not think I am boasting—no I am every day thankful to God from a love to Study and Love to Work. I am healthy and Strong and a loving happy companion. Have no Habits at all that is hurtful to my body or against Gods Commands. Lecture on health and talk for Our Creators cause at times. I lived in that lovely country many years.

If you have no Place for me do you know where there is a place outside of Hospital for such a Man as above teaches.

Faithful to all,

Dr. ....

[The recipient of this letter did not have a vacancy for this applicant and the letter has been forwarded to THE JOURNAL for publication thinking that some of our hospitals may desire the services of this applicant.—EDITOR.]

### OF THE MAKING OF QUACKS

Chiropractic Spondylotherapy! This classic mouthful of syllables appears at the top of a card issued by a Detroit "doctor." It scans like poetry. It has a rise and fall of sound at once brisk and noble. It could be set to ragtime and sung trippingly. But its meaning is scarcely up to its meter, since it is the ingeniously invented name of the newest form of medical malpractice. "A Drugless Science which removes the cause of disease," its exploiters call it, and on this basis they conduct two fake colleges in Michigan. Manipulation of the spine is its alpha and omega. All human ills, according to its creed, arise from a distorted spinal column. The wart on your nose and the corn on your toe are alike referable to an erring backbone. The chiropractor juggles your joints, and thereby cures you of the following troubles:

Paralysis, deafness, loss of voice, lumbago, catarrh, gallstones, overweight, rheumatism, appendicitis, neuralgia, neurasthenia, eye, ear, throat, lung, stomach, liver, heart disorders, diabetes, bronchitis, asthma, la grippe, dropsy, eczema, goiter, fevers, epilepsy, insanity, St. Vitus's dance, kidney and bladder troubles, etc., all cancers, tumors, etc.

That, considering the all-embracing "etc.," is a fairly comprehensive claim. One might well suppose that our old friend, Liquozone, had sprung into activity and print again. In the pamphlet issued by this cult, the term "Chiropractic" is duly explained as a "combination of two Greek words, meaning to do by hand." Spondylotherapy is not explicated in the text; but, summoning up all our classic lore, we hazard a guess that it derives from the Greek root which has given us that expressive, if inelegant term, "spondulics," the love of which is said to be the root of all evil, and from "therapy" the science of healing or relief. Hence it would appear, etymologically, that a Spondylotherapeutic Chiropractor is a gentleman who, with expert hand, relieves you of your surplus cash painlessly while you wait. Meantime the colleges flourish and turn out their regular crop of quacks under the easy laws of Michigan.—*Collier's Weekly*, April 12.

# The JOURNAL

of the

## Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

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The Society does not hold itself responsible for opinions expressed in original papers, discussions, communications or advertisements.

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### MAY

## Editorials

### THE GOVERNOR'S APPOINTMENTS

#### NEW MEMBERS OF THE STATE BOARD OF REGISTRATION IN MEDICINE

Through the kindness and courtesy of Governor Feriss, THE JOURNAL is privileged to make the following announcement of the names of the men whom the Governor will appoint as members of the State Board of Registration in Medicine:

Dr. G. W. Nafe, Fremont, eclectic.  
Dr. Albertus Nyland, Grand Rapids, physiomedico.  
Dr. George Lefevre, Muskegon, homeopath.  
Dr. W. T. Dodge, Big Rapids, regular.  
Dr. C. B. Burr, Flint, regular.

We congratulate the Governor on his selection of these able and representative men. The public is assured that their's as well as the profession's interests will be safeguarded and protected through the work of these appointees. Further comment is unnecessary.

### PITUITARY EXTRACT VERSUS FORCEPS

The percentage of morbidity and mortality following confinements are still too high as compared to other forms of surgery. This is undoubtedly due to a lack of proper aseptic technic and, in addition to this, to manipulative or instrumental deliveries. A perfect asepsis in a home involves more expense and trouble than most of the profession are willing to assume. It is generally conceded that instrumental delivery adds greatly to the danger to the woman by increasing the opportunities for introducing infection and also by increasing the number of abrasions through which this infection may enter the body.

We have not only to consider the woman with reference to lacerations and infections, but also the babe must be kept in mind as well. We must think of the compressed brains, the paralysis of facial and brachial nerves, the fracture of bones, the compression of cords and of skin abrasions with possibility of infection. Perhaps most women are confined by those who do little or no surgery and yet who have to do the forceps operations—often without adequate preparation or assistance. This fact, coupled with the relatively infrequent and therefore possibly unskilled use of the forceps, adds to the danger.

With these conditions in mind we will welcome any means which will accomplish the same results as forceps and which will, at the same time, involve less danger to the mother and babe. Pituitary extract gives promise at this time to serve such a function. Humpstone reports its use in sixty-four cases without any bad effects. He states, however, that in a small percentage of these cases no effect whatever was obtained. He used an initial dose of 4 c.c. and in some cases repeated this amount.

Pituitary extract given to a woman with a dilated cervix, but in whom the powers have failed, will in most cases cause her delivery in thirty or forty minutes. The pains will, in about five minutes, increase in frequency from five or six minutes to one or two minutes. They will retain their rhythmical character and their force will be increased. The effect of the drug, in some cases, will subside in about three hours; the patient will respond equally well to a second dose. It has changed false into true pains, even when given during an interval of quiet. It has dilated a cervix where the natural pains were inefficient in even starting the dilatation. It seems to prevent rather than increase the danger of post-partum hemorrhage.



De Lee states that 75 per cent. of all forceps operations are due to uterine inertia. If then, we find in pituitary extract that which will overcome uterine inertia, this subject at once assumes extraordinary importance. It will mean that three out of four forceps operations can be avoided. It will mean that we will have one chance of infection where now there are four. It will mean that cases indicating forceps can be delivered safely even in unfavorable surroundings and by the average physician. It will mean that the simple, easily carried and easily operated hypodermic syringe will largely replace the more cumbersome and more dangerous forceps. Not only this; it will mean the avoiding of hours of painful expectancy—which we now utilize rather than to apply forceps and bring about expulsive uterine contractions.

Pituitary extract is a relatively new drug in the field of obstetrics and the reports are at this time meager; from these reports, however, which are available, and from personal communication with those who have employed pituitarin, one is warranted in the conclusion that it should be tried out more extensively than has been done. If it proves to be as useful to the profession at large as it has in the hands of the few who have used it, this drug will undoubtedly become an important factor in the reduction of puerperal sepsis.

C. E. B.

#### ADVANCES IN MEDICAL EDUCATION

Within the last ten years there has been a marked advance in medical education in this country, so that the best medical schools in the United States now compare favorably in equipment and in curricula with those of the most advanced nations of Europe. This work has been accomplished largely through the efforts of the Council on Medical Education of the American Medical Association, aided by the examining boards of various states, and by the most enlightened men throughout the profession. Ten years ago there were more than one hundred and sixty medical schools in this country, in most of which there were practically no requirements for admission. Many of these schools had no adequate equipment, and gave short and imperfect courses. Now the number of medical schools has been reduced to 117. There are still about forty for which there is no adequate reason for existing. In several states the requirement for admission to examination for the practice of medicine has been advanced so that only graduates of the best schools can practice in these states. The number of states joining this list is gradually increasing,

and many of the poorer schools still in existence must either improve or must go out of existence.

Medical education is now demanding higher standards than are now required by any other profession. A graduate of the Grand Rapids High School goes to the university with the intention of studying medicine. He must spend two years in the department of literature, science, and the arts, and during these two years he must show himself to be an excellent student, above the average. At the expiration of this time, provided his work has been satisfactorily done, he enters the medical department, and continues here for four years. It is therefore six years from the time that he leaves the high school before he can begin the practice of his profession. Moreover, most of these students take an extra year in hospital work. Within a few years this will probably be a requirement, making seven years before the young man can get into his active work after he leaves the high school. By establishing these high standards the medical profession is attracting the brainiest men and women to our profession.

It is true that the financial inducements to go into medicine are not great compared with the rewards which may be obtained with the expenditure of the same amount of time and energy in other professions, but money is not the highest motive which moves the best men. It must come to pass that medicine will demand and will receive the respect and admiration of the best in all callings of life.

The opportunities for work in preventive medicine are growing greater and more alluring every day. It was said by Descartes more than two hundred years ago that the regeneration and elevation of man is to be secured through preventive medicine, and this statement is becoming more and more evidently true every year. There is a bill before the legislature of the state of Michigan now, providing for dividing the state into sanitary districts and the appointment of a competent medical man in each, who will give all of his time and energy to the prevention of disease. The law provides a fairly good living salary.

It is interesting to note that for the first time in the history of this country the Governor of a great state, Governor Sulzer of New York, has issued a proclamation on public health. This is the first time so far as we know that any governor has deemed this matter of sufficient importance to issue such a document. The recommendations made by Governor Sulzer are much the same as those of the Amberson bill now before the Michigan legislature. Governor Sulzer recommends

that the state of New York be divided into sanitary districts, and that in each a competent medical man be appointed at a good living salary, and that he be expected to give all of his time to the prevention of disease. Enlightened people are beginning to realize that public health is the greatest asset which the state may have. Whether the bill before the legislature of this state passes or not, it or something similar will quite surely be enacted some time in the near future. The medical profession must be prepared to supply men of the highest grade physically, mentally and morally for this work. It will be the duty of the sanitary officers of these districts not only to prevent microbic disease, but to study feeble-mindedness, insanity, sexual obliquity, and every condition which tends to the debasement of the race. Certainly there promises to be a great future for enlightened medicine in this country.

V. C. V., Sr.

#### LEGAL DEFENSE

Our general attorneys predict an increase of threats against physicians because of the lessening of litigation by the enactment of the employers' liability law. "The hungry lawyer, looking for business, will pick on the doctor and the saloonkeeper as the two vulnerable classes of citizens." The opinion above expressed surprised me at first, for I have been looking for a decrease of threats against us as a result of the added care on the doctor's part and a certainty that his claim would not be contested on the lawyer's part. But, as I think about the matter and study the threats reported to me, I incline to their opinion. We may have a year, or several years, of increased litigation against physicians until we can demonstrate more generally that the members of the state society are defended and will not compromise a blackmail suit or threat.

During the first three months of 1913, seventeen threats have been reported to me and not one has a legitimate legal basis. There are four threats arising from obstetrical cases claiming a laceration or a pain in the back followed, for which the doctor is responsible. Two men were sued because in operating on an appendiceal abscess the appendix was not removed. Three men are jointly threatened because subsequent to an extensive operation on the ethmoid and frontal sinuses with a secondary operation in another city, a small fragment of drainage gauze came from the wound. There is one suit alleging pain and swelling following an intravenous injection of neosalvarsan. In an extensive operation for

carcinoma of the breast, a pair of small artery forceps slipped into the axillary fossa and were not discovered until a subsequent dressing. The threat is based on the fact that the forceps were left in, and not that any special damage resulted therefrom. Another threat is from a disgruntled husband who took his wife to a doctor for a thorough examination and later complains because a bimanual examination of the pelvic viscera was made, without consent, although he was in the room during the whole proceeding. There is no one of these cases where, from the professional viewpoint, any blame is justly attached to the doctor, and I think this view will be taken by any court which may have to pass on them.

It appears then, that extremely trivial pretexts are being sought on which to base threats against the profession and it behooves us to be on our guard, with added care in our work to avoid, so far as possible, any basis for either just or unjust criticism. We must also avoid criticism of the work of others, which often arouses unwarranted dissatisfaction where it did not previously exist.

FRANK BURR TIBBALS,

Chairman, Medicolegal Committee.

#### THERAPEUTICS \*

In perusing the programs of the county societies of our state and those of other states, we have noticed the absence of papers bearing on the use and indications of drugs and other therapeutic agents. The time was when papers on "The Use of Veratrum Viridi," "The Indications and Action of Digitalis," and similar subjects bearing on purely materia medica and therapeutics, occupied prominent positions on the programs of medical meetings and were attended with active discussions. Recently they have become less in number and we are acquainted with societies which have not had a paper on drugs or therapeutics for a period of two or three years. We may well ask: Why is this? The reason is obvious. "Formerly the basis of all therapy was empiricism, and empiricism only." Times changed, and with the change there was developed a metaphysical reasoning which gave rise to the development of many of the new schools and "cults."

Again, the teachings of the times changed and with the new light that was brought to bear on the etiology and pathology of disease, a period of therapeutic nihilism became manifest. Our great

\*The thought for this editorial was secured from Forchheimer's "Therapeutics of Internal Diseases," published by D. Appleton & Company. The quotations are taken from this valuable publication.

clinicians declared that our drugs had no potency in either preventing or limiting, or in curing a given symptom or disease; that rest in bed, hygienic surroundings, a few remedies exhibited for pain and catharsis were the only indications for the interference in any disease or illness.

Again, as times and customs changed, "physiology, pathology, chemistry, microscopy and physics, as applied to medicine, were being developed and therapeutical problems were being solved by laboratory methods." With such an attitude existing, there was generated a greater tendency to more accurate observation of symptoms and disease. With such an attitude, greater attention was being directed to the physiological effects of drugs, and medical therapeutics took on new life and received a new impetus. It was the period that gave birth to scientific medical therapeutics: "The result of observation plus reasoning."

To-day, therapeutics as a science and an art is beginning to assume its proper place in medical science. Although its present-day teachings are still in their infancy, we have every reason to believe that the near future will see it assume a more definite and still greater scientific status. The advances that have been made in the past few years have been in the line of prophylaxis and specific-therapy. The physiological action of the drug is no longer the only indication for its administration; the scientific prescriber is demanding therapeutic effect on pathological states and conditions. Specific causes of disease are sought for and specific methods of treatment are applied.

"Formerly there were but two specifics: mercury and quinin." To-day many of our infectious diseases are combated by a large number of specifics in the form of vaccination and serotherapy. More recently there has arisen a new light, and by it we see new and important factors in the causation of disease: "One which promises much for therapeutics—namely, physical chemistry and the development of organotherapy."

We again note that physical methods are receiving renewed attention; "hydrotherapy, balneology, massage and gymnastics, mechanotherapy, electrotherapy and x-ray therapy are being more frequently employed." Hospitals are providing space and apartments for their administration and their usage is no longer being delegated to the osteopath and chiropractic and similar cults, who, in their narrow-minded, myopic-visioned, bigoted state, claim for them the specific "cure-all" property for all symptomatic and pathologic conditions. "Nutrition and dietetics have been put on a scientific basis and psychotherapy is

being applied in a rational way for definite purposes."

With this brief sketch of the evolution that is taking place in the field of therapeutics, we may feel safe and warranted to prophesy that the treatment of internal disease is becoming of more and greater importance. Therefore, it behooves one desirous of remaining abreast of the times to perfect himself not only in the pathology and pathogenesis and symptomatology of disease, but also in the present-day teachings of scientific therapeutics, the recent developments in which well deserve a more prominent place on the programs of our medical meetings.

### DUES

In compliance with the instructions of the House of Delegates and the Council, this issue of THE JOURNAL contains a full list of the members of the Michigan State Medical Society who are in arrears with their 1913 dues.

The records of the society show a membership of 2,290. Eighteen hundred and eighty-one members have paid their 1913 dues and are in good standing and entitled to all the benefits accruing from membership. Four hundred and nine members have neglected to pay their 1913 dues. Unless their dues are received in this office on or before May 10, their names will be transferred to the suspended list; their JOURNAL will be discontinued; they will be denied the protection of the Medicolegal Committee in any action brought against them for services rendered during their period of suspension; they will be reported to the secretary of the American Medical Association as dropped for non-payment of dues.

We are of the opinion that not one of these members desire that their membership shall be permitted to thus terminate. The reason for their being in arrears, in most instances, may be attributed to simple neglect and failure to send their remittances to their county secretary. They do not want and they cannot afford to permit their membership to lapse. Much as the society needs them they need the society more. They cannot afford to step down and out of the ranks of organized medicine.

This is a day of organized effort and one must unite and remain united with the organization representative of his profession or craft if he ever hopes to attain the greatest ends and good possible. Directly and indirectly untold benefits and privileges accrue to him who is found in the ranks of the organized body that is representative of his pursuit in life. The lonely worker in any calling



does not command the respect, confidence and esteem of the public whom he seeks to serve and to whom he looks for the demands on his service. The stamp of approval—membership in the county, state and national bodies of his profession—means much to the public to-day and is a valuable asset to him who is dependent on this public for his livelihood. You, whom we are forced to place on this suspended list, know too well the value that your membership has been to you in the past. It is going to be of still more added value in the future. You must not permit the placement of your name on the delinquent list to continue. Prompt action and the sending of your check to your county secretary and the receipt of your dues by this office before the 10th instant, will secure your reinstatement to good standing. *Do it now. You simply must.*

#### THE OFFICIAL CALL FOR PAPERS

Members of the Michigan State Medical Society desiring to read a paper before any section of the state society during the sessions of the annual meeting at Flint on September 4 and 5, are hereby requested to at once communicate their intentions to the section officers. In order that definite arrangements may be made, the officers request that they be furnished with the title of the paper, a brief synopsis of its contents and whether or not it will be illustrated by means of lantern slides.

*Section on General Medicine:* James Clelland, Jr., Chairman, Detroit; B. A. Shepard, Secretary, Kalamazoo.

*Section on Surgery:* R. J. Hutchinson, Chairman, Grand Rapids; Ray C. Stone, Secretary, Battle Creek.

*Section on Gynecology and Obstetrics:* E. K. Cullen, Detroit, Chairman; W. M. Manton, Detroit, Secretary.

*Section on Ophthalmology and Oto-Laryngology:* Eugene Smith, Chairman, Detroit; H. B. Morse, Secretary, Bay City.

#### Editorial Comments

WE have secured twenty-five binders for our JOURNAL. They will be sent to any member for one dollar. By securing this binder you will have a neat holder for your journals and at the end of the year the completed volume will be a

valuable addition to your library. Save your journals and do this easily by sending us your check for \$1.

HAVE you an old school or college mate living in another state or some intimate friend who resides in some distant locality who at one time or another may have been associated with the profession of our state and still is interested when hearing from and about their erstwhile associates? If so, why not send him THE JOURNAL? On the receipt of one dollar, THE JOURNAL will be sent for one year to any address in the United States.

THE annual meeting of the American Medical Association will be held in Minneapolis, June 16-20. Michigan should be well represented at this meeting. The inspiration gained by attendance on such a meeting will more than pay you for your absence from your practice. The opportunity of seeing and hearing the leaders of the profession in this country should not be permitted to pass. The exhibitions in connection with the meeting are in themselves an educational feature. We urge it on you to so arrange your plans so that you may attend this convention. You will not regret it.

A PASTER, bearing the inscription:



is attached to every letter that is sent out by this office. If every member will heed this exhortation THE JOURNAL will be able to supply the reader with a larger number, a greater variety and more valuable original articles. It is the readers' privilege to determine whether or not they will permit THE JOURNAL to attain greater end.

AN interesting clinical case report is not only valuable, but also instructive. A careful report of the features and history of some particular case, together with the ultimate termination of the case and deductions that are drawn from your treatment, go to make up a valuable feature of every medical publication. THE JOURNAL desires to publish one or more clinical case reports in every future issue. To this end we are requesting the members to send the report of every interesting case that they may have been connected with. Half-tone illustrations will be

made from any photographs or charts that may be sent in connection with such a report. May we not receive your case report for the June issue?

AN editorial comment in the *New York Medical Journal* for March 22, 1913, draws attention to the fact that the teaspoon does not always exactly contain 60 minims, has varied in capacity, in fact, from 60 to 120 minims, and it comments on the action of the Australian Medical Society which has recommended the various pharmaceutical organizations to request the pharmacists to write the doses in ounces and drachms instead of teaspoonfuls, and to advise their patrons to secure properly graduated medicine glasses.

This is a very good suggestion, for in this day of standardized preparations teaspoons and table-spoons are obvious anachronisms. A graduated medicine glass is inexpensive, many druggists give them away, and the physician is assured that his prescribed remedies are administered in proper dosage if he but instructs the dispensing pharmacist to write the directions in drachms and ounces.

LAST month we stated that the May issue would contain a résumé of the enactments of our legislature together with comments thereon. At the time when that notice was written it was believed that the legislature would adjourn about the 15th or 20th of April. Since then the date for adjournment has not been definitely determined on and we are compelled to postpone our résumé of the work of the legislature, in so far as it pertains to the profession, until our June issue.

In connection herewith, we also impart the information that a bill has been introduced which, if carried, will amend our present medical practice act. This bill has been approved by the attorney-general and the governor and has been introduced as the result of the work of the Legislative Committee of our Society. It defines the practice of medicine—a definition of which has never been on our statute books—and provides for the punishment of the violators of the medical practice laws of the state.

WITHIN two hours after the press bulletins announced that there was a dire need of medical and nursing assistance for the relief of the flood sufferers in Ohio, the following telegram was sent to President Wilson, Governor Cox and the president of the Ohio State Medical Society:

"Hillsdale, Mich.

"The Michigan State Medical Society is prepared to send you a corps of physicians and nurses for immediate service upon receipt of your message indicating that such assistance is desired.

"W. H. SAWYER, President."

In a short time, President Sawyer received the following reply:

"Wire received. Owing to destruction of rail communication I fear you could not reach us. We need funds more than anything else.

"GOVERNOR COX."

While the ability of the medical profession of Ohio was recognized as competent to meet any emergency that might arise, President Sawyer deemed it but proper to tender the services of a corps of Michigan physicians should conditions in Ohio become such that outside medical aid would be required.

THE subscription of one dollar that is deducted from the annual dues that are paid into the treasury is sufficient to defray about half the expenses of the publication of *THE JOURNAL*. In order that there may be no deficit in the closing of the books at the end of the year, *THE JOURNAL* is dependent on the revenue received from advertisements. In other words the advertisements defray a great share of the expense incurred in publishing *THE JOURNAL*. In order that this publication may continue to receive contracts calling for advertising space it is incumbent on our readers to demonstrate that advertising in *THE JOURNAL* pays. Everyone of our advertisers are reliable. We accept none but honest advertisements. They are able to supply your every need at a price that is no greater than what you would pay if you made your purchases elsewhere. Everything being equal, why not make it a point to patronize those who patronize you? Buy your supplies from *JOURNAL* advertisers. By so doing you will be advancing your own interests and you will also enable the Publication Committee to send you a better and more valuable journal. *You*, the individual member, have the power to assist in making our *JOURNAL* a medium that will be sought by advertisers. Patronize them and tell them why you are doing so. "Let's all pull together."

WE feel disposed to make the following suggestions to the contributors to our *JOURNAL*. The time is particularly opportune when we consider the fact that many of the papers that are to be presented at the state meeting are now in the

course of preparation. These papers will later appear in *THE JOURNAL*. Every publication must adopt a certain style for the guidance of its editorial policy and to produce an appearance of uniformity. This so-called "style" pertains to the construction of its original articles, etc. Many of the papers that are submitted are without a title, author's name or other mark of identification. Some of the manuscripts are typewritten, others are in long-hand, and again some are composed of both. We might continue and note numerous other inconsistencies. This is not our purpose. What we desire is to impart to our readers and contributors a few general rules which they are kindly requested to observe while composing and preparing their various writings for publication. These rules are as follows:

1. Have the manuscript typewritten, double spaced, on white paper, preferably of the size 8½x11 inches.
2. Leave a margin of at least one inch to the left for editor's notes.
3. Start your first page with the heading of the article, followed by your full name and town or city, thus:

#### INFANTILE PARALYSIS

By

John Doe, M.D.  
Detroit, Mich.

4. If the paper has been read before some society or organization, place a \* after the title, and at the bottom of the page give in a footnote the organization, place and date where the paper was read.

5. When referring to some author or publication or employing a quotation, place a number after the quotation or author's name, and on the bottom of that same page note your reference.

6. The ambiguous and inconsistent use of pronouns should be avoided. Sometimes an author will refer to himself in one place as "the writer," in another as "the author," in the third as "I," and still in another as "we." He may then go on and use the pronoun "we" with reference to the medical profession or the world at large, and to refer to the writer of some previously cited literature as "the author." Such a confusion may be so complete that it is impossible to be sure when the author was referring to himself and when to some other person. Consistency here is important. An author should refer to himself in the same terms throughout; and certainly the first personal pronoun—I, me—is the clearest and most satisfactory term to use.

7. In case reports especially, time should be defined exactly. "Six weeks ago," "a month ago," are meaningless phrases, especially if the history extends over a period of a year. "May 1, 1913" conveys a precise time to the reader's mind; such an expression is therefore to be preferred when indicating time or the lapse of time in the writing of a case history.

It is hoped that these suggestions will be of material assistance to those who are composing papers that will appear for publication in future issues of *THE JOURNAL*. Their observance will enable us to embody a pleasing uniformity in this publication's make-up.

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### State News Notes

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Dr. Louis Kratze has entered practice in Escanaba.

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A daughter was born to Dr. and Mrs. William E. Blodgett of Detroit on March 25.

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Dr. H. W. Long of Escanaba fractured his right forearm while cranking his automobile March 25.

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Dr. J. T. Cramer received a fracture of the radius of the right arm while cranking his machine April 2.

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Dr. W. Ellwood Tew, who has been practicing medicine in Boyne City for the past ten years, has moved to Bessemer.

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Dr. G. C. Bartley has resumed his practice at North Escanaba, after an absence of six months doing post-graduate work.

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Dr. F. C. Kidner of Detroit delivered an address before the State Physical Education Society which met in Detroit on April 12.

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Securing the position as resident physician of some of the mines at Palmer, Dr. Arnt Sorberg of Ishpeming has entered on his new work.

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Dr. W. H. Sawyer, president of the State Society, was reelected a member of the board of regents of the State University by a large majority.

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Dr. R. L. Dixon, of the state board of health, was elected president of the Lake States Sanitary Association at a conference held in Racine, Wis., March 10.

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The department of Public Health is established with this issue of *THE JOURNAL* and will be edited by Dr. G. L. Dixon, secretary of the State Board of Health.



The Houghton County Anti-Tuberculosis Society at its annual meeting elected Dr. L. L. Hubbard and Dr. A. F. Fischer president and vice-president, respectively.

The members of the Hillsdale County Medical Society gave a banquet and theater party to the physicians of the county and their wives. An enjoyable evening is reported.

A society has been organized in Marshall to plan for the building of a city hospital in accordance with the will of the late Charles Pratt, who left an estate of \$75,000 for that purpose.

Dr. H. H. Cummings, assistant to Dr. Reuben Peterson, was appointed university physician by the board of regents, and Dr. Elsie S. Pratt of Denver was appointed physician to the women.

Dr. Andrew P. Biddle, R. A. C. Wollenberg, J. Vernon White and J. A. McMillan announce the removal of their offices to the J. Henry Smith building, corner of Griswold and State streets, Detroit.

Dr. W. E. Blodgett of Detroit has been elected consulting orthopedist to the Butterworth Hospital of Grand Rapids. Dr. Blodgett will be in attendance at the clinic in this hospital on Friday of each week.

Dr. R. E. McCotter, an instructor in anatomy in the medical department of the State University, has resigned and will move to Paw Paw, where he has arranged to take over the practice of the late Dr. A. G. Six.

Dr. Edward T. Abrams of Hancock, upper peninsula member of the State Board of Health, has accepted the invitation to deliver the commencement address to this year's graduates of the Detroit College of Medicine.

At the regular meeting of the State Board of Health, held in Lansing, April 11, Dr. V. C. Vaughn, Sr., of Ann Arbor, was reelected president of the board and Dr. T. M. Koon of Grand Rapids was elected vice-president.

The physicians and citizens of Marquette are planning the erection of a \$75,000 hospital which shall be known as the St. Luke's Hospital of Marquette. An architect has been engaged to make the plans and \$71,000 has been raised.

The Mellin's Food Company is prepared to furnish physicians, upon request, an indexed card showing the caloric value per fluid ounce of whole milk of average quality, of top milk and bottom milk of various percentages, of skimmed milk and whey. A postal card will bring it to you.

There are thirty-six seniors in the medical department of the university this year, and out of that

number twenty-five have been appointed to staff positions in the university hospital and in several of the larger hospitals throughout the country. Eleven of the class will enter private practice.

Dr. F. B. Walker, secretary of the Detroit College of Medicine, informs us that the board of trustees of the Detroit College of Medicine has recommended to the stockholders of the corporation the sale of the property to a new organization that purposes to develop the institution and secure an endowment. The meeting of the stockholders has not as yet been called, but it is anticipated that the reorganization will be completed in a short time.

House bill No. 172, introduced by Representative Montieth of Port Huron, which gives the state board of health supervision over all waterworks and sewage disposal systems in the state, has passed the house and senate and is now in the governor's hands for signature. This bill carries the provision for a state sanitary engineer to be appointed by the state board of health at a salary not to exceed \$3,000. We believe that this is one of the most important features of public health legislation under consideration during this session of the legislature and feel disposed to congratulate the legislature for passing this bill.

A party composed of the following Grand Rapids surgeons attended a special clinic conducted at the University Hospital, Ann Arbor, by Dr. Reuben Peterson on April 4: Drs. G. L. McBride, R. J. Hutchinson, T. C. Irwin, F. C. Warnshuis, A. M. Campbell and F. J. Lee. Seven cases, in which there were some interesting points regarding diagnosis, were operated on by Dr. Peterson. Upon the completion of the work in the amphitheater a tour of the hospital was made. Dr. Peterson was the host at a noon luncheon. It is the intention of the men composing this party to make similar visits, at least once a month, to some of the other clinics in the middle west.

The State Board of Health is asking for an increased appropriation for the health department. At the present time the office fund is \$9,000 and the board is asking that this be increased to \$25,000. In connection with this request it is interesting to note the position of Michigan in the data furnished by the U. S. Public Health Service, which is tabulated to show the amount of money appropriated by the various states for public health purposes for the year 1912: District of Columbia appropriates 33 cents per capita; Pennsylvania, 25 cents per capita; Nevada, 12 cents per capita; Massachusetts, 5 cents per capita; Illinois, 2 cents per capita; Michigan less than 1 cent per capita. This information has been taken at random from the report of the U. S. Public Health Service. This report places Michigan at the foot of the list with the smallest per capita appropriation of any state in the union. For public health protection this report is certainly a very strong argument for granting the increased appropriation asked by our State Board of Health. We sincerely hope that the grant will have been made when this issue of THE JOURNAL reaches our readers.

## Death

**Ardiel, Lancelot M., M.D.** Western University, London, Ont., 1891. Member of St. Clair County Medical Society and American Medical Association. Died at his home in Avoca, March 18, 1913.

## Society Proceedings

### MICHIGAN STATE MEDICAL SOCIETY

#### ROLL OF MEMBERS IN ARREARS FOR 1913 ANNUAL DUES

"We recommend the publishing in the May JOURNAL each year the names of all those who, according to the secretary's books, were delinquent on April 15." Action taken by the House of Delegates.

Members whose names are found in the following list have not paid their 1913 dues. Acting on the instructions received from the House of Delegates the following course will be pursued in regard to them unless their remittance reaches this office on or before May 10:

Their JOURNAL will be discontinued.

They will be placed on the suspended list.

They will be denied the protection of the Medicolegal Committee for any proceedings brought against them for services rendered during their period of suspension.

They will be reported to the American Medical Association as dropped for nonpayment of dues.

Is your name on the list?

If so please send your dues to your county secretary at once and thus enable us to keep you in good standing. DO IT NOW.

#### ALPENA COUNTY MEDICAL SOCIETY

Case, H. W., Mikado. Weed, J. W., Alpena.  
Smith, Ralph C., Harrisville.

#### ANTRIM COUNTY MEDICAL SOCIETY

Gibson, R. E. L., Central Lake. Nichols, R. H., Bellaire.  
Hoag, T. S., Alden. Willoughby, L. L., Mancelona.  
Long, Chas., Elk Rapids. Yerkes, L. N., Elk Rapids.

#### BAY COUNTY MEDICAL SOCIETY

Ballard, S. L., Auburn. Scrafford, Royston Earle,  
Jones, J. A., Bay City. Bay City.  
Keho, John A., Bay City. Stone, D. F., Bay City.  
McDowell, G. M., Bay City. Zarembo, Alois J., Bay City.  
Thompson, F. C., Bay City.

#### BERRIEN COUNTY MEDICAL SOCIETY

Gregg, Sherman, St. Joseph. Scott, A. H., St. Joseph.

#### BRANCH COUNTY MEDICAL SOCIETY

Hancock, E. E., Girard. Whitmore, R. C., Quincy.

#### CALHOUN COUNTY MEDICAL SOCIETY

Abbott, A. J., Albion. Joy, L. S., Marshall.  
Bangham, A. D., Albion. Marshall, E. J., Marshall.  
Case, James T., Battle Creek. Nelson, A. W., Battle Creek.  
Elliott, J. A., Battle Creek. Read, A. J., Battle Creek.  
Grant, H. E., Albion. Riley, W. H., Battle Creek.  
Hodges, Lewis, Tekousha. Roth, Paul, Battle Creek.  
Hoyt, A. A., Battle Creek. Ryan, C. W., Battle Creek.  
Johnson, Gertrude, Battle Creek. Staines, Carrie, Battle Creek.  
Creek. Thompson, J. A., Homer.

#### CHEBOYGAN COUNTY MEDICAL SOCIETY

Chapman, W. E., Cheboygan. St. Armour, S. A., Cheboygan.  
MacGregor, A. B., Cheboygan. Stringham, J. R., Cheboygan.  
Reed, W. F., Cheboygan. Tweedale, C. B., Cheboygan.  
Stringham, W. R., Cheboygan.

#### CHIPPEWA COUNTY MEDICAL SOCIETY

Cameron, J. A., Pickford.

#### CLINTON COUNTY MEDICAL SOCIETY

Campbell, O. B., Ovid. Dunn, F. C., St. Johns.  
Coulahan, A., De Witt. Porter, C. B., Elsie.  
Dodge, J. B., St. Johns.

#### DELTA COUNTY MEDICAL SOCIETY

Gjorkman, George, Gladstone. Colton, W. A., Ecanaba.  
Kee, D. N., Gladstone.

#### DICKINSON COUNTY MEDICAL SOCIETY

Alving, Otto, Iron Mountain. Dockery, M. F., Sagola.  
Boyce, G. H., Iron Mountain. Jones, B. W., Vulcan.  
Coffin, L. E., Iron Mountain. Larson, F., Crystal Falls.  
Collins, C. D., Iron Mountain. Le Galvan, C., Iron Mountain.  
Crowell, J. A., Iron Mountain. Libby, E. M., Iron River.  
Cruse, S. E., Iron Mountain. Remillar, I. J., Beaverville,  
Darling, A. M., Crystal Falls. Ill.

#### EATON COUNTY MEDICAL SOCIETY

Bradley, J. B., Eaton Rapids. Hyde, R. J., Eaton Rapids.  
Canfield, Wilson, Eaton Rapids. Weaver, L. F., Lansing.

#### EMMET COUNTY MEDICAL SOCIETY

Moorman, E. R., Pellston. Runyan, E. A., Harbor Spgs.  
Risk, R. A., Pellston.

#### GENESEE COUNTY MEDICAL SOCIETY

Cogshall, Bela, Flint. Ramoth, C. P., Flint.  
Hoaton, J. H., Flushing.

#### GRAND TRAVERSE COUNTY MEDICAL SOCIETY

Bailey, R., Traverse City. Miner, E. B., Traverse City.  
Carrow, Fleming, Traverse City.

#### GRATIOT COUNTY MEDICAL SOCIETY

Carpenter, J. P., Ithaca. Petty, George W., St. Louis.

#### HILLSDALE COUNTY MEDICAL SOCIETY

Atterbury, W. H., Litchfield. Becktal, Eli C., Camden.  
Barnes, J. Wesley, Prattville. Clobridge, Charles F., Allen.

#### HOUGHTON COUNTY MEDICAL SOCIETY

Abrams, J. C., Calumet. Orr, G. W., Lake Linden.  
Harkness, R. B., Houghton. Quick, J. B., Kearsage.  
Herring, H. G., Calumet. Rhines, James, Mohawk.  
Homes, J. T., Calumet. Rodi, C. H., Calumet.  
Joy, H. M., Calumet. Van Slyke, W. H., Hancock.  
Matchette, W. H., Hancock. Whitten, W. D., Baltic.  
Moore, J. W., Atlantic Mine. Wiley, R. E., Osceola.

#### HURON COUNTY MEDICAL SOCIETY

Frenzel, Otto, Pigeon. Shaver, F. A., Lincoln.  
Friedlander, B., Sebawaing. Thompson, J. E., Elkton.  
Morden, C. B., Bad Axe. Wastell, Fred W., Harbor  
Munro, D. D., Kinde. Beach.

#### INGHAM COUNTY MEDICAL SOCIETY

Alexander, R. H., Mason. Shumway, F. W., Lansing.  
Green, A. E., Leslie. Turner, F. N., Lansing.

#### IONIA COUNTY MEDICAL SOCIETY

Alton, W. R., Portland. Martin, F. W., Portland.  
Grant, W. A., Lyons. Woodbury, W. E., Manilla.  
Maynard, H. M., Ionia.

#### ISABELLA-CLARE COUNTY MEDICAL SOCIETY

Gruber, J. E., Shepherd.

#### JACKSON COUNTY MEDICAL SOCIETY

Brown, H. Durand, Jackson. Roger, F. W., Jackson.  
Lansford, T. S., Jackson. Rose, Frank L., Jackson.  
Parnall, C. G., Jackson. Townsend, G. H., Jackson.

#### KALAMAZOO ACADEMY OF MEDICINE

Bulson, G. A., Vicksburg. McLeay, Don, Prairieville.  
Giddings, A. M., Climax. O'Dell, J. H., Three Rivers.  
Haight, A. M., Climax. Smith, Malcolm, Allegan.  
Hutton, A. M., Ashteno. Smith, Hugh, Gobleville.  
Leighton, N. E., Hopkins Station.

#### KENT COUNTY MEDICAL SOCIETY

Annis, L. C., Cedar Springs. Chamberlin, Louis H., Grand Rapids.  
Apted, Ralph, Grand Rapids. Chappel, G. A., Grand Rapids.  
Aurin, E. C., Cedar Springs. Chappel, C. E., Berlin.  
Beel, H. J., Grand Rapids. Corbus, B. R., Grand Rapids.  
Berge, E. E., Grand Rapids. De Kraker, J. M., Grand Rapids.  
Bligham, Earl, Grand Rapids. Dewar, J. B., Grand Rapids.  
Boise, Eugene, Grand Rapids. Dingman, H. W., Grand Rapids.  
Brady, John, Grand Rapids. Ids.  
Brayman, Charles W., Cedar Springs. Duncan, J. A. P., Grand Rapids.  
Cardwell, J. F., Grand Rapids. Ids.

Edie, J. O., Grand Rapids.  
 Edwards, J. S., Grand Rapids.  
 Ferguson, J. E., Grand Rapids.  
 Fuller, R. W., Grand Rapids.  
 Fuller, Wm., Grand Rapids.  
 Chareeb, Saleem E., Grand Rapids.  
 Gordon, T. De Witt, Grand Rapids.  
 Graybiel, Alex. G., Caledonia.  
 Griswold, J. B., Grand Rapids.  
 Hirschberger, Freda, Grand Rapids.  
 Hooker, Charles E., Grand Rapids.  
 Huizinga, J. G., Grand Rapids.  
 Hulst, Henry, Grand Rapids.  
 Innis, J. H., Grand Rapids.  
 Irwin, T. C., Grand Rapids.  
 Kasabian, M. H., Grand Rapids.  
 Kelly, C. M., Grand Rapids.  
 Lee, Francis J., Grand Rapids.  
 Lyman, W. D., Grand Rapids.  
 McDonnell, O. C., Lowell.  
 McPherson, A. G., Grand Rapids.  
 Maurits, Reuben, Grand Rapids.

#### LAPEER COUNTY MEDICAL SOCIETY

Bolton, A. O., Gladwin.  
 Frazier, J. V., Lapeer.  
 Sulter, J. P., Hadley.

#### LIVINGSTON COUNTY MEDICAL SOCIETY

Coan, M. H., Brighton.  
 Culver, C. F., Howell.  
 McGarvagh, J. A., Fowlerville.

#### MACOMB COUNTY MEDICAL SOCIETY

Bush, H. J., Armada.  
 Gibson, J. C., Detroit.  
 Lungerhansen, W. T., Mt. Clemens.  
 Meek, Chas. F., New Baltimore.

#### MANISTEE COUNTY MEDICAL SOCIETY

Foster, R. F., Bear Lake.

#### MARQUETTE-ALGER COUNTY MEDICAL SOCIETY

Lamb, E. E., Republic.  
 Spinks, R. E., Diorite.

#### MASON COUNTY MEDICAL SOCIETY

Switzer, G. W., Ludington.

#### MECOSTA COUNTY MEDICAL SOCIETY

Watley, Samuel, Blanchard.

#### MONTCALM COUNTY MEDICAL SOCIETY

Boles, E. W., Coral.  
 Culbertson, A. P., Vickeryville.

#### MUSKEGON-OCEANA MEDICAL SOCIETY

Bussard, R. I., Muskegon Heights.  
 Campbell, W. A., Muskegon.

#### NEWAYGO COUNTY MEDICAL SOCIETY

Weaver, L. S., Saranac.  
 Nafe, George W., Fremont.

#### OAKLAND COUNTY MEDICAL SOCIETY

Anderson, J. W., Royal Oak.  
 Baker, M. I., Milford.  
 Brannock, A. L., Pontiac.  
 Castell, D. G., Pontiac.  
 Chapman, H. S., Pontiac.  
 Chapman, J. B., Pontiac.  
 Chapman, E. A., Walled Lake.  
 Robb, S. B., Leonard.  
 Starker, Clarence, Pontiac.  
 Sutherland, C. J., Clarkston.  
 Ulothe, M. J., Ortonville.  
 Van Sickle, J. R., Holly.  
 Morris, C. D., Pontiac.  
 Miller, J. A., Farmington.  
 Manley, Ora, Highland.  
 Johnson, Fred L., Holly.  
 German, F. D., Franklin.  
 Galbraith, S. E., Pontiac.

#### OSCEOLA-LAKE COUNTY MEDICAL SOCIETY

Barnard, T. H., Tustin.

#### OTTAWA COUNTY MEDICAL SOCIETY

Huizinga, T. G., Zeeland.  
 Stroud, H. A., Douglas.

#### PRESQUE ISLE COUNTY MEDICAL SOCIETY

Larke, B. G., Rogers City.  
 Monroe, Neil C., Presque Isle.  
 Nester, M. H., Rogers City.

Moon, Cora A., Grand Rapids.  
 Northrup, Wm., Grand Rapids.  
 Parkhurst, L. P., Grand Rapids.  
 Patterson, A. J., Grand Rapids.  
 Patterson, E. W. E., Grand Rapids.  
 Robertson, F. D., Grand Rapids.  
 Roller, L. A., Grand Rapids.  
 Rooks, J. J., Grand Rapids.  
 Schurtz, Perry, Grand Rapids.  
 Sicotte, R., Sparta.  
 Sinclair, D. S., Grand Rapids.  
 Sinclair, Melvin C., Grand Rapids.  
 Smith, M. E., Cordovia, Alaska.  
 Thompson, A. B., Grand Rapids.  
 Urganhart, R. T., Grand Rapids.  
 Wallace, D. J., Sparta.  
 Williams, Alden H., Grand Rapids.  
 Wolford, C. T., Grand Rapids.  
 Wright, J. M., Grand Rapids.

#### SAGINAW COUNTY MEDICAL SOCIETY

Edelman, F. W., Saginaw.  
 Ferguson, G. H., Saginaw.  
 English, Wm., Saginaw.  
 Ferguson, F. H., Saginaw.  
 Grigg, A., Saginaw.  
 Harris, Leon B., Saginaw.  
 Leach, H. M., Saginaw.  
 Leitch, A. E., Saginaw.  
 McLean, Nell, Saginaw.  
 Stewart, G. W., Saginaw.  
 Watson, C. S., Saginaw.

#### SANILAC COUNTY MEDICAL SOCIETY

Griffin, W. A., Deckerville.  
 Ward, W. Wiers, Marlette.

#### SHIAWASSEE COUNTY MEDICAL SOCIETY

Benjamin, W. A., Bancroft.  
 Carney, E. J., Durand.  
 Cramer, G. L. G., Owosso.  
 Edred, J. N., Chesaning.  
 Elliott, E., Chesaning.  
 Gooding, A. S., Owosso.  
 Wilson, P. S., Owosso.

#### ST. CLAIR COUNTY MEDICAL SOCIETY

Campbell, N. D., Blaine.  
 Patterson, M. A., Port Huron.  
 Thompson, A. E., St. Clair.  
 Waters, George, Memphis.

#### ST. JOSEPH COUNTY MEDICAL SOCIETY

Seidmore, A. W., Three Rivers.

#### TRI-COUNTY MEDICAL SOCIETY

Babcock, E. B., Kalkaska.  
 Barry, J. A., Harietta.  
 Johnson, Donald, Marlon.  
 White, H. C., McBain.

#### TUSCOLA COUNTY MEDICAL SOCIETY

Cowley, O. G., Vassar.  
 McLean, Charles H., Detroit.  
 Morris, H. L., Vassar.

#### WASHTENAW COUNTY MEDICAL SOCIETY

Gage, John G., Ann Arbor.  
 Lowe, Charles R., Ann Arbor.  
 Paton, T. W., Ypsilanti.  
 Rexford, H. B., Sebawaing.  
 Roth, George B., Ann Arbor.  
 Scheurer, P. A., Manchester.  
 Schmidt, H. W., Chelsea.  
 Seidel, U. D., Ann Arbor.  
 Smith, F. N., Ann Arbor.  
 Warren, L. F., Ann Arbor.  
 Willey, Gordon F., Ann Arbor.  
 Woodbridge, O. O., Ann Arbor.

#### WAYNE COUNTY MEDICAL SOCIETY

Abbott, A. W., Detroit.  
 Adam, J. R., Detroit.  
 Arndt, O. H., Detroit.  
 Barlow, P. A., Detroit.  
 Baskerville, R. J., Detroit.  
 Beall, John A., Detroit.  
 Binning, D. E., Detroit.  
 Buesser, F., Detroit.  
 Burnham, F. V., Detroit.  
 Callan, J. T., Detroit.  
 Canfield, G. M., Detroit.  
 Carr, J. R., Detroit.  
 Cary, Hugh, Detroit.  
 Chaney, Willard, Detroit.  
 Cobleigh, E. J., Detroit.  
 Cope, C. S., Detroit.  
 Costigan, D. D., Detroit.  
 Crittenden, C. L., Detroit.  
 Cumming, R. B., Wayne.  
 Dewar, T. A., Detroit.  
 Dreyer, A. E., Detroit.  
 Duncombe, D. A. C., Detroit.  
 Dunn, Rowe A. T., Detroit.  
 Dwyer, H. F., Detroit.  
 Estabrook, B. F., Detroit.  
 Froude, Philip, Detroit.  
 George, C. H., Detroit.  
 Glemet, R. G., Detroit.  
 Goodenow, R. J., Detroit.  
 Gunsalus, K., Detroit.  
 Hamilton, Stewart, Detroit.  
 Henderson, E. W., Detroit.  
 Herbert, Leo H., Detroit.  
 Hoag, R. B., Detroit.  
 Hutchinson, W. G., Detroit.  
 Hutchins, W. H., Detroit.  
 Inglis, David, Detroit.  
 Ives, A. W., Detroit.  
 Johnson, A. H., Detroit.  
 Judd, C. H., Detroit.  
 Kenning, Thomas, Detroit.  
 Kipp, A. W., Detroit.  
 Kilbourne, K. E., Detroit.  
 King, H. S., Detroit.  
 Knags, C. W., Detroit.  
 Krausman, G. C., Detroit.  
 Lane, W. P., Detroit.  
 Lawton, T. M., Detroit.  
 Layton, M. A., Detroit.  
 Loranger, P. J., Detroit.  
 Lyon, L. W., Detroit.  
 MacQuisten, W. G., Detroit.  
 Maus, H. J. C., Detroit.  
 McAfee, F. W., Detroit.  
 McClelland, R. J., Detroit.  
 McClurg, David, Detroit.  
 McDonald, N. G., Detroit.  
 McEacheron, A. D., Detroit.  
 MacGough, James, Detroit.  
 McMahon, G. H., Detroit.  
 McMahon, H. O., Detroit.  
 Mead, James E., Detroit.  
 Meridian, W. J., Detroit.  
 Merritt, E. D., Detroit.  
 Miner, E. G., Detroit.  
 Mowry, W. P., Detroit.  
 Muenz, Carl F., Detroit.  
 Mulheron, Hugh, Detroit.  
 Newton, E. P., Detroit.  
 O'Brien, E. J., Detroit.  
 Olandi, J. P., Detroit.  
 Opperman, Rudolph, Detroit.  
 Oryan, F. W., Detroit.  
 Pfeiffer, R. L., Detroit.  
 Porey, W. G., Detroit.  
 Potter, W. A., Detroit.  
 Potter, Andrew D., Detroit.  
 Pulford, F. W., Detroit.  
 Radzinski, A. J., Detroit.  
 Reid, W. J., Detroit.  
 Reilly, Frank A., Detroit.  
 Roach, John J., Detroit.  
 Roberts, F. J., Detroit.  
 Robinson, George W., Detroit.  
 Sadowski, R. J., Detroit.  
 Schureman, J. W., Detroit.  
 Schwanz, M. J., Detroit.  
 Sipe, George K., Detroit.  
 Smith, F. Harvey, Detroit.  
 Snyder, W. H., Detroit.  
 Starring, Anna, Detroit.  
 Stevenson, B. A., Detroit.  
 Stevens, W. C., Detroit.  
 Tacey, J. P., Detroit.  
 Taylor, R. S., Detroit.  
 Thomas, L. C., Detroit.  
 Thomson, W. C., Detroit.  
 Tufford, J. C., Detroit.  
 Van Loon, Henry J., Detroit.  
 Watson, C. E., Detroit.  
 Wiles, E. W., Detroit.  
 Williams, S. K., Detroit.  
 Wilson, J. W., Detroit.  
 Worden, A. L., Detroit.  
 Singer, Frank, Detroit.  
 Zumstein, F. E., Detroit.



## REPORT OF THE PUBLIC HEALTH COMMITTEE

Dr. Clara M. Davis of Lansing, secretary of the Public Health Committee, submits the following report:

**LENAWEE COUNTY.**—Work of the Public Health Committee is under the supervision of the county society. Dr. G. M. Lochner, secretary, Adrian.

**EMMETT COUNTY.**—No public health work done this year. Matter tabled.

**ARENAC AND IOSCO COUNTIES.**—No Public Health Committee in this county.

**MONROE COUNTY.**—Nothing accomplished. Medical Society trying to arrange for lectures on contagious diseases and medical inspection of schools.

**GRATIOT COUNTY.**—This society did not appoint a committee on Public Health.

**ISABELLA AND CLARE COUNTIES.**—Work in charge of Woman's Club. City administration not urging public health work.

**ONTONAGON COUNTY.**—Nothing has been done in this county.

**ST. CLAIR COUNTY.**—Lectures delivered before Woman's Club, Y. W. C. A. and Nurse's Society on Eugenics, and medical inspection of schools. Arrangements made for other lectures.

**MONTCALM COUNTY.**—No work done as yet, but plans will be discussed by the county society on April 10.

**SCHOOLCRAFT COUNTY.**—Good anti-tuberculosis work. Lecture on public health by Dr. Kiefer. Establishment of a drinking fountain by the Ladies' Literary Club.

**KALAMAZOO.**—Your committee on public health and education would respectfully submit the following report:

In January your committee met with a number of social workers of the city and outlined topics for public meetings to be held in the Academy of Medicine rooms each Wednesday evening, beginning February 5. The topics selected and programs carried out are indicated below:

"Mouth Hygiene," by Dentist H. H. Tashjian.  
"Tonsils and Adenoids," by Dr. Edward Bernstein.

February 12.—"Child Welfare," by Miss Lucy Gage, head of the kindergarten department of the Western State Normal.

February 19.—Dr. L. H. Harvey of the Western State Normal gave an address on "Heredity."

February 26.—The subject of housing was discussed by Dr. H. L. Stetson, dean and acting president of Kalamazoo College. The address was based upon the findings of a careful survey of our city conducted by the senior class of the college. Dr. Ostrander and Dr. Light of the Tuberculosis Society supplemented this from the results of studies of local conditions from a tuberculosis point of view. Several others took part in the discussion.

March 5.—Dr. H. R. Light talked on pure food and pure drugs.

March 12.—Dr. Blanche Epler discussed contagion.

March 26.—"City and Community Hygiene" was presented by the following speakers: Andrew Lendrink, city engineer, talked on our streets and sewers; George Houston, city water commissioner, discussed our water supply; Dr. A. H. Rockwell, city health officer, dis-

cussed the disposal of garbage and night soil; Mr. Andrews, city plumbing inspector, sent a communication on sanitary plumbing; Mr. Chester S. Carney, principal of the Portage street high school, discussed flies as a means of communicating disease; Mayor C. B. Hays gave a general discussion of the topics from the mayor's point of view.

Previous to this series of talks by our local people, Dr. W. A. Evans of Chicago gave a health lecture in the First Baptist Church on Tuesday, January 28, on "What Kalamazoo Can Do." Dr. Evans also spoke to the normal students and teachers of the public schools the same afternoon.

Notice was sent by me to the secretary of each county society in the state asking for a report of the public health work done through the various societies. The above societies were the only ones to reply.

Submitted by

CLARA M. DAVIS, M.D.  
Secretary Public Health Committee.

## DETROIT COLLEGE OF MEDICINE ALUMNI ASSOCIATION. ANNUAL CLINIC WEEK

May 21 to May 28, 1913

The Annual Clinic of the Alumni Association of the Detroit College of Medicine will be held in Detroit during the week of May 21-28. In addition to the Detroit men, outside talent from various parts of the country will assist in conducting this clinic. Judging from the professional standing of these men the coming clinic week bids fair to be one of the most successful and valuable weeks in the history of the association.

The following is the list of the outside men who will conduct special clinics:

On Wednesday, May 21, Edward B. Dench, Ph.B., M.D., will give a clinic on "Diseases of the Mastoid Amenable to Radical Mastoid Operation." Dr. Dench is professor of Otology, University and Bellevue Hospital Medical College; Attending Aural Surgeon, New York Eye and Ear Infirmary; Consulting Otolologist to St. Luke's Hospital, to the New York Orthopedic Hospital and to the Neurological Institute.

On Thursday, May 22, Lyman Greene, M.D., will hold a clinic on "Congenital Asthenia of the Universal Type." Dr. Greene is now professor of medicine and chief of the Department of Medicine in the University of Minnesota.

On Friday, May 23, Otto T. Freer of Chicago will hold a clinic on "Tonsillelectomy by Knife Dissection," and "Resection of the Inferior Turbinate Bone." Dr. Freer is assistant professor Eye, Ear, Nose and Throat at Rush Medical College.

On Saturday, May 24, John Rogers, M.D., of New York City, will give a clinic on "The Medical Treatment of Thyroid Disturbances." Dr. Rogers is really the originator of the thyroid serum therapy.

On Monday, May 26, John B. Murphy, A.M., M.D., will hold a clinic on "Diseases of the Bones and Joints." Dr. J. B. Murphy needs no introduction to the profession of Michigan.

On Tuesday, May 27, Frederick T. Lord, A.B., M.D., of Boston will hold a clinic on "Diseases of the Lungs and Pleura." Dr. Lord is a member of the staff of the Massachusetts General Hospital and assistant instructor in medicine in the Harvard Medical School.

On Tuesday, May 27, Hugh Cabot, A.B., M.D., of Boston, will give a clinic on "Genito-Urinary Diseases." Dr. Cabot is a member of the staff of the Baptist and Massachusetts General Hospital, Boston.

On Wednesday, May 28, Herbert A. Bruce, M.D., of Toronto, will hold a surgical clinic. Dr. Bruce is a member of the faculty of the Toronto University.

The following is a complete schedule for the work of the entire week:

*Wednesday, May 21—Harper Hospital*

9 to 10 a. m.—"Diseases of the Rectum and Colon," Dr. L. J. Hirschman.

10 to 11 a. m.—"Gynecology and Obstetrics," Dr. J. H. Carstens.

11 a. m. to 1 p. m.—"Radical Mastoid Operation," Dr. Edward B. Dench, New York.

3 to 4 p. m.—"X-Ray Demonstrations," Dr. P. M. Hickey.

4 to 5 p. m.—"Dermatological Clinic," Drs. H. R. Varney and R. C. Jamison.

5 to 6 p. m.—"Chemistry of the Automobile," F. T. F. Stephenson.

*Tuesday, May 22—St. Mary's Hospital*

9 to 10 a. m.—Anemia Clinic, Dr. W. M. Donald.

10 to 11 a. m.—Eye and Ear Clinic," Dr. E. B. Smith.

11 a. m. to 1 p. m.—"Congenital Asthenia, Universal Type," Dr. C. L. Greene, Minneapolis.

3 to 4 p. m.—"Appendicitis," Dr. Andries.

4 to 5 p. m.—Gastro-Enterology, Dr. Jas. E. Davis.

5 to 6 p. m.—Cardiac Irregularities, W. J. Wilson, Jr., M.D.

Evening—Stag Party, Alumni Association Harper Hospital.

*Friday, May 23—Harper Hospital*

9 to 10 a. m.—Gynecological Clinic, Dr. J. H. Bell.

10 to 11 a. m.—Medical Clinic, Dr. A. G. Jennings.

11 a. m. to 1 p. m.—Tonsillectomy and Nasal Operations, Dr. Otto T. Freer, Chicago.

3 to 4 p. m.—Special car to Wayne County Asylum, Dr. J. J. Markel.

4 to 5 p. m.—Neurological Clinics, Drs. Inglis, Ives and Hitchcock.

5 to 6 p. m.—Complimentary luncheon.

*Saturday, May 24—St. Mary's Hospital*

9 to 10 a. m.—Surgical Clinic, Dr. F. B. Walker.

10 to 11 a. m.—Nose, Throat and Chest Clinic, Dr. S. G. Miner.

11 a. m. to 1 p. m.—"Diseases of the Thyroid Gland," Dr. John Rogers, New York.

3 to 4 p. m.—Dermatological Clinic, Dr. A. P. Biddle.

4 to 5 p. m.—Blood Pressure in General Practice, Dr. R. E. Mercer.

5 to 6 p. m.—Genito-Urinary Diseases, Dr. W. E. Keane.

Evening—Smoker at the Wayne County Medical building.

*Monday, May 26—Harper Hospital*

9 to 10 a. m.—Orthopedic Surgery, Dr. D. LaFerte.

10 to 11 a. m.—Surgical Clinic, Dr. Angus McLean.

11 a. m. to 1 p. m.—"Diseases of Bones and Joints," Dr. J. B. Murphy, Chicago.

3 to 5 p. m.—At Herman Kiefer Hospital. "Infections," Dr. Guy L. Kiefer.

Evening.—Meeting of the Wayne County Medical Society.

*Tuesday, May 27—St. Mary's Hospital*

9 to 10 a. m.—Gynecology, Dr. H. W. Yates.

10 to 11 a. m.—"Genito-Urinary Diseases," Dr. Hugh Cabot, Boston.

11 a. m. to 1 p. m.—"Diseases of the Lungs," Dr. F. L. Lord, Boston.

3 to 4 p. m.—Surgical Clinic, Dr. W. J. Seymour.

4 to 5 p. m.—Diseases of Children, Dr. S. L. Polozker.

5 to 6 p. m.—X-Ray, Dr. G. Chene.

*Wednesday, May 28—Harper Hospital*

9 to 10 a. m.—Rectal Diseases, Dr. McMillan.

10 to 11 a. m.—Surgery, Drs. Potter and Sterling.

11 a. m. to 1 p. m.—"Surgery of Obstruction of the Large Bowel," Dr. R. E. Bruce, Toronto.

3 to 4 p. m.—Eye and Ear, Dr. D. M. Campbell.

4 to 5 p. m.—Cerebro-Spinal Meningitis, Dr. G. McKean.

5 to 6 p. m.—Application of the Cystoscope, Dr. W. J. Cassidy.

Evening.—Class reunion—1883, 1888, 1893, 1898, 1903, 1908.

*Thursday, May 29*

9 to 10 a. m.—Parke, Davis & Co.'s laboratory.

10 a. m.—Boat Ride. Parke, Davis & Co.'s dock. Dinner on boat. Guests of Dr. George Potter. Annual meeting and election of officers on boat, returning at 5:30 p. m.

Evening.—Graduating exercises and banquet.

R. C. ANDRIES, Secretary.

**ALPENA COUNTY**

The regular meeting of the Alpena County Medical Society was held March 20, 1913, at the Elks' Club rooms. Dr. E. E. McKnight, the newly elected president, entertained the members at dinner at 6 p. m., following which he delivered his inaugural address.

Dr. McKnight summarized the evils obtaining from contract practice and declared that there was lost to the profession in Alpena \$30,000 yearly by reason of underpaid lodge and contract work. The fourteen physicians present expressed similar forcible conclusions and a committee of three was appointed to report at the next meeting ways of mitigating this evil.

Drs. Leo Secrist, W. A. Secrist and J. W. Small were appointed a committee to entertain the Society at their next meeting, April 17.

C. M. WILLIAMS, Secretary.

**BENZIE COUNTY**

At the regular meeting of the Benzie County Medical Society held at Benzonia March 26, 1913, the following officers were elected for the coming year:

President, Dr. C. P. Doyle, Frankfort; vice-president, Dr. H. J. Kinne, Frankfort; secretary-treasurer, Dr. E. J. C. Ellis, Benzonia-Beulah.

Dr. G. O. Edmunds of Honor was elected delegate to the state convention and E. J. C. Ellis of Benzonia-Beulah, alternate.

E. J. C. ELLIS, Secretary.

**BERRIEN COUNTY**

The regular monthly meeting of the Berrien County Medical Society was held in the parlors of Hotel Whitcomb, St. Joseph, at 4 p. m., April 10, 1913.

Dr. F. C. Warnshuis, secretary of the State Society, read a paper entitled "The Open Treatment of Fractures." The discussion of the paper was led by Drs. Sowers and Vitch.

Dr. Warnshuis also addressed the society upon the work that was being done by the state organization. An informal discussion was engaged in and methods for the upbuilding of the county organization were thoroughly discussed. After the meeting an informal supper was served in the dining room of the hotel and an enjoyable hour was spent. There was a good attendance at the meeting.

CARL M. MITCHELL, Secretary.

**DELTA COUNTY**

The regular monthly meeting of the Delta County Medical Society was held at the Escanaba High School March 14, 1913. A symposium on "Goitre," illustrated by lantern slides, was given. Dr. A. J. Carlson of Escanaba discussing the pathology, Dr. E. R. Westcott of Spalding the symptomatology and treatment, and Dr. M. P. Fenelon of Escanaba the surgery of this condition.

H. W. LONG, Secretary.

**INGHAM COUNTY**

The regular meeting of the Ingham County Medical Society was held in Lansing April 1.

The experiment of holding a clinic turned out to be gratifyingly successful, as the nurses' lecture room at the Sparrow Hospital was crowded with members and visitors, all of whom were more than repaid for the time and effort expended.

Doctor Udo Wile, professor of Dermatology and Syphilology at the University of Michigan, conducted the clinic, making all his diagnoses from objective findings only, ignoring histories and declining to listen to recitals of symptoms. The material was ample and of a suitable variety so that an animated interest was maintained throughout the long session. The last patient, having recently acquired hard chancre, consented to receive an injection of neo-salvarsan, for which purpose the meeting adjourned to the operating room. The point in connection with the salvarsan injection which seemed most to impress the meeting was the extreme simplicity of Dr. Wile's apparatus, which consisted only of a burette and a hollow needle connected by a rubber tube.

Before final adjournment Dr. C. H. Brucher offered the following resolution, which was unanimously adopted:

*Resolved*, That inasmuch as this Society has been most profitably instructed and agreeably entertained by Dr. Wile's clinic, that we hereby tender him our thanks and express the wish that he visit us again.

HENRY S. BARTHOLOMEW, Secretary.

**KALAMAZOO ACADEMY OF MEDICINE****IMPROVEMENTS IN ACADEMY ROOMS**

The rooms which the Academy of Medicine now enjoy were furnished by Dr. Van Deusen over twenty years ago without one cent of expense to the members

of the Society. The original cost was probably close to a thousand dollars.

The members of the Academy have been using the rooms and furnishings for all these years without a dollar having been spent in keeping up the rooms, except for cleaning. But furniture, even though of the best quality, will not last forever. Every chair in the Academy rooms which Dr. Van Deusen gave to the Society is at this time imperatively in need of repair. Seven leather tops have already been spoiled because repair of the bottoms was not made before, and seven more may have to be recovered.

Two estimates have been considered by the Board of Directors, the lesser one of which was \$93.60.

The lantern which we now own is of such antiquated construction that it should be replaced. Any one present at the last meeting will heartily agree to this. If we get another lantern, we must have the combined lantern and reflectoscope, which will cost \$100 to \$125.

There is also needed a magazine rack for the journals. This can be placed on one of the large tables in the room, made so as to serve as a support for the journals while being read, and in the center can be built a series of pigeonholes for preserving a year's copies of two or three dozen different journals. This will probably cost about \$59. The three items totaling \$250 to \$275 would be an average of a little over two dollars for each member.

This equipment would make our rooms the finest in the state of Michigan, and provide all that could be asked for by any guest, whether he wanted to show slides or opaque objects to illustrate his talk.

Since three dollars from every member's dues goes to the State Society, the local Society gets but one dollar from each member outside of Kalamazoo, and but two dollars from city members. This barely pays the staple expenses, as can be seen by the treasurer's report, so improvements will have to be provided for through special contribution.

At this meeting it will be recommended by the Board of Directors that a special assessment be made of one dollar per member, and that the balance be raised by voluntary donation.

The following papers were presented at the meeting held on March 25: "Pyelitis in Infancy," by Dr. Clara B. Davis of Lansing.

"Isotonic Sea Water in Therapeutics," by Dr. Rollin H. Stevens of Detroit.

The meeting of April 8 consisted of the following program: "The Mode of Transmission of Poliomyelitis," by Walter H. Sawyer, president of the Michigan State Medical Society, Hillsdale. "The Phenomena of Infection," by Victor C. Vaughan, M.D., Ann Arbor. In the evening at an open public meeting in the First M. E. Church, Dr. V. C. Vaughan delivered an address on "Eugenics or Race Betterment."

DR. C. B. FULKERSON, Secretary.

**KENT COUNTY**

The regular meeting of the Kent County Medical Society was held in the Board of Trade Rooms on Wednesday evening, March 26, 1913. Dr. A. M. Campbell read a paper on "Cesarean Section" and illus-



trated the technic of the operation by means of lantern slides. Dr. A. W. Ives of Detroit was the invited guest of the evening and delivered a very interesting lecture on "Some Impressions of the Psychologists." There was a good discussion of both papers.

The regular meeting of the Kent County Medical Society was held in the Board of Trade Rooms on Wednesday evening, April 9, 1913. Dr. Mark Marshall of Ann Arbor read a paper on "The Dietetic Treatment of Gastric Ulcer." Dr. Hugo A. Freund of Detroit read a paper on "The Action of Digitalis in Cardiac Irregularities." The discussion of both of these papers was opened by Drs. Corbus and Northrup.

E. W. DALES, Secretary.

#### LENAWEE COUNTY

Following out the plan recently adopted, the Lenawee County Medical Society met in the Library at Adrian, March 11, 1913, with about twenty members in attendance.

Several very interesting clinical cases were reported by the following members: Drs. Waitney, Westgate, Lamley, Chase, Morden, Sutton and Spaulding. Much interest is manifested in the meetings and much useful knowledge gained. The meeting adjourned until March 25.

GEORGE M. LOCHNER, Secretary.

The regular semi-monthly meeting of the Lenawee County Medical Society was held in Adrian, March 25, 1913. The attendance was not as large as at our last meeting, due to prevalent storm conditions.

Many interesting cases were reported, especially a case of myxedema by Dr. Morden.

The Society is planning on securing some prominent physicians of the state for addresses during the coming months.

GEORGE M. LOCHNER, Secretary.

#### MONROE COUNTY

The regular meeting of the Monroe County Medical Society was held at the M. & M. Club rooms, Monroe, on Thursday, April 17, at 2 p. m.

Dr. Louis A. Levison of Toledo presented a paper on "Internal Secretions." A paper on "Small-pox" was read by Dr. W. F. Acker of Monroe, followed by a general discussion.

CHARLES T. SOUTHWORTH, Secretary.

#### MUSKEGON-OCEANA COUNTY

The regular meeting of the Muskegon-Oceana County Medical Society was held at the office of Dr. W. A. Campbell, Friday evening, March 14, 1913. A communication from the State Board of Registration relative to the bill before the state legislature to regulate the registration and licensing of Chiropractics in this state was read. Dr. Marshall moved that the secretary communicate with the author of the letter stating that we will assist in any concerted action against this bill if he will point the way. Seconded by Hotvedt. Carried. A paper on "Injuries of the Hip" was then read by Dr. W. A. Campbell. Discussion opened by Dr. Olson.

The regular meeting of the Muskegon-Oceana County Medical Society was held at the office of Dr. A. A. Smith, Friday, March 28, 1913. A communication from Senator Joe B. Hadden of the Twenty-Third district in regard to the Chiropractic bill was read. Dr. Hotvedt moved that the president and secretary draw up a letter addressed to our representative and senator stating our reasons for opposing the bill. Seconded. Carried. A communication from *The Journal of the American Medical Association* in regard to the United Doctors was read. Dr. Gamber moved that the secretary obtain the information asked for and send to the author of the letter. A paper by Dr. Smith on "Puerperal Venous Thrombosis and Embolism" was read. The discussion was opened by Dr. Hartman. A clinical case of Alopecia Areata was presented.

J. T. CRAMER, Secretary.

#### SAGINAW COUNTY

At the annual meeting of the Saginaw County Medical Society, held in the mayor's office at the City Hall, March 19, 1913, the following officers were elected for the ensuing year:

President, Dr. Robert MacGregor, Saginaw; vice-president, Dr. W. A. DeFoe, Saginaw; secretary-treasurer, Dr. Alex. R. McKinney, Saginaw.

The trustees of last year were reelected. The retiring president, Dr. G. H. Ferguson, was elected delegate to the state convention, with Dr. D. E. Bagshaw, the retiring secretary, as alternate.

The executive officers were elected to act as the program committee to provide papers for the meetings of the coming year, which are to be held regularly every month.

The relationship of lodge practice to the family physician was discussed and a special committee appointed to investigate and report at the next meeting as to what can be done in this regard.

Following this discussion, the meeting adjourned.

A. R. MCKINNEY, Secretary.

#### TUSCOLA COUNTY

On April 14, 1913, the Tuscola County Medical Society met at the Montague hotel at Caro. The meeting was called to order by the president, Dr. J. MacKenzie. Following the business section Dr. H. H. Cummings of Ann Arbor read a paper on "Acute and Chronic Pelvic Inflammatory Disease," Drs. Seeley and Deming leading the discussion that followed.

Dr. C. D. Brooks of Detroit presented a paper on "Diseases of the Thyroid and Their Surgical Treatment," the discussion of which was led by Drs. Townsend and Copp.

W. C. GARVIN, Secretary.

#### WAYNE COUNTY

The regular meeting of the Wayne County Medical Society was held at the Medical Home March 17, with the Vice-President, L. J. Hirschman in the chair. R. L. Clark, secretary.

Dr. A. W. Ives read a paper on "The Impressions of the Psychologist."

The discussion of Dr. Ives' paper was postponed in order to give a hearing to friends of a bill introduced at Lansing to establish a farm colony for epileptics,

thereby relieving the institution at Lapeer from their care.

Judge Hulbert came before the Society in behalf of establishing an institution for the care of epileptics. Epileptics have no right to be placed in the same place as feeble minded persons. A bill has been introduced at Lansing to separate these classes. Lapeer is now fearfully overcrowded and cannot begin to take care of those who have been committed. To provide relief, Lapeer has asked about \$97,000. This will give room for 250 new cases. There are now about 450 cases of epilepsy in Lapeer besides many more in county houses and homes. The farm colony bill calls for \$200,000 to purchase 2,000 acres of land, and this will relieve Lapeer of the care of 450 epileptics, as well as care for many now getting no attention.

Dr. A. P. Ohlmacher said that in 1866 Ohio first called attention to the separate care of epileptics. It took nearly thirty years to accomplish this in Ohio. The first appropriation was obtained in 1890 in Ohio. Once the state has taken the first step, the development comes as a matter of necessity. It is important not only that epileptics should be separated from the feeble minded and criminals, but also from normal people. In the Ohio Hospital for Epileptics the mistake was made of making it inaccessible. Large buildings was another mistake made in Ohio. Epileptics must be classified amongst themselves. The insane epileptics need different care from those who are not insane. These latter can by their own labor become almost self-supporting and should not be kept in the same institution with the low grade insane epileptics. Dr. Marker of Wayne reported eight epileptics in the county house and fifteen epileptics in the insane asylum at Wayne. The epileptics should not be among the insane.

Dr. Hitchcock recalled the first colony for epileptics established in 1857 in Germany. Ten states have already started colonies and Michigan should get in line. There are no statistics as to how many epileptics are in Michigan. There are about 10,000 in Illinois. Many would be glad to come to a proper epileptic colony who would never consider Lapeer. The following resolutions were offered and carried:

The misfortune of epilepsy creates a large, a pathetic and dangerous class urgently demanding care at the hands of the state.

This burdened class may make their lives most useful to themselves and to others and know that amount of happiness to which they are justly entitled and at the same time free the state from a real danger only in suitable institutional environment.

An experience of nearly fifty years has demonstrated that colony care of the epileptic is best adapted to promote their ultimate welfare, and no less than ten states have already seen the light and started on this plan. Michigan should not lag behind. Therefore

*Resolved*, That the Wayne County Medical Society give its cordial and earnest endorsement to the bill now before the legislature to create a farm colony for epileptics in Michigan.

Dr. Chadsey called attention to the one hundred and fifty more or less feeble minded pupils in special schools. Many of these would be better at Lapeer. Many of at least the Moron type are as yet undiscovered in the schools and out. These Morons are a very distinct menace to society. We have perhaps 9,000 feeble minded at large throughout the state.

If Lapeer were freed from the care of epileptics, many others of a much higher type of feeble mindedness might be cared for and taught to do some useful, self-supporting trade.

Mr. Meigs, one of the board of control of Lapeer, said that the greatest error made at Lapeer was the having to care for epileptics. Lapeer needs two more cottages to care for the feeble minded. When 1,500 inmates are reached at Lapeer, another institution should be started. The danger of feeble-minded individuals is that of reproduction.

Mr. James Inglis asked for active work on the part of the medical profession to aid in passing the bill at Lansing.

Dr. Ives moved that a committee of five be appointed by the president to go to Lansing to urge the passage of this bill. Drs. Hitchcock, W. L. Babcock, Ives, G. L. Connor and Kiefer were appointed such a committee.

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The regular meeting of the Wayne County Medical Society was held at the Medical building March 24, with the president, E. W. Haass, in the chair; R. L. Clark, secretary.

Dr. Carstens called attention to the fact that Dr. Sawyer of Hillsdale, the president of the Michigan State Medical Society, was a candidate for re-election to the position of Regent of the University of Michigan.

Dr. Ramen Guiteras of New York City gave an illustrated talk on the kidney. One of the most interesting anomalies of the kidney is unilateral kidney. These are usually lobulated. Lantern slides of such kidneys removed at autopsy were shown. These are often as large as two ordinary kidneys. These are generally very rare, but in three cases these were found amongst fifteen autopsies from one small hospital.

Another interesting anomaly is the misplaced kidney. These are usually hydronephrotic and the vessels come off much lower than in the normal kidney. Pictures of such kidneys from actual cases were shown. This condition has been mistaken for ovarian cyst. The very first nephrectomy was performed on such a kidney, diagnosed as an ovarian cyst and removed under a mistaken diagnosis. The various stages of hydronephroma was illustrated by diagrams. As the hydronephroma gets larger the kidney gets more and more atrophied. Rupture of the kidney is comparatively rare. This sometimes gives an appearance as if a watermelon were placed in the abdomen. The fluid from rupture of the kidney is dark red with white flakes in it. This is very characteristic and is probably due to the action of the urine on the blood.

Cysts of the kidney are very rare. They may be single or even double and contain serum.

A large hydrated cyst of the kidney was shown. This was located just at the junction of the pelvis with the kidney proper in a very large kidney. A polycystic kidney was shown. They grow larger and larger, probably from birth. Such kidneys are inoperable, as both kidneys are affected and there is not enough healthy kidney tissue on either side to sustain life. Some examples of kidney tumors were shown. A sarcoma of the kidney was shown, as well as one of carcinoma of the kidney. The sarcoma was sprouting through the kidney capsule. The carcinomatous kidney was not adherent and could be removed and the patient

is still alive after six years. A very large varicocele may be a symptom of tumor of the kidney.

A few cases of stone in the kidney were demonstrated. They may be infected and give septic symptoms. A picture of an angular stone four inches long was thrown on the screen.

There are a great many cases of non-functioning kidney which are never discovered. The stones may destroy the kidney tissue by atrophy. You can never tell from catheterization whether the kidney is in its proper place. Non-functioning kidneys are usually destroyed either by tuberculosis or stone. On tubercular kidneys you can always see tubercles under the capsule. The ureter may be so infiltrated with tubercle as to make catheterization impossible. To get a good specimen from a tuberculous kidney, the organ must be injected through the ureter with the preservative used and in this way the cavities are brought out.

Tubercular deposits in the ureter may obstruct the passage of urine and cause the damming back of the urine, making pressure atrophy of the kidney and destroying the kidney in a few days. The kidney may be destroyed by tubercular cavities. In all cases of suppurative disease of the kidney, you want to find the ureter and follow it up to free it from all kinks and adhesions. Pyonephrosis may completely destroy a kidney and cause a nonfunctioning organ.

Anuria is the great emergency operation on the kidney. A number of cases of perinephritic abscesses were illustrated. The paper was profusely illustrated with about a hundred interesting lantern slides.

Dr. Robbins moved a rising vote of thanks from the society. Seconded. Carried. Dr. Guiteras was elected an honorary member of the Society.

The following were elected to active membership: Drs. Rhoda Farqueson De Blois, Victor Bolko Orzechowski, L. Slominski, W. H. Diebill, Harry D. Trask and Frank A. Kelly.

The following were elected to associate membership: Frank W. Kerr, Walter L. Dodd, Henry C. Reinhold and Dr. G. D. Narvin.

The Surgical Section held its regular meeting April 3 with the chairman, F. B. Walker, in the chair; F. N. Blanchard, secretary pro tem.

Dr. C. D. Brooks read the paper of the evening on "Severe Infection of the Appendix."

Appendicitis is a surgical disease and an early diagnosis must be made if we do our full duty to our patient.

It is found at all ages, and while a disease of the young, accounts for many of the intra-abdominal disorders from infancy to old age.

Many mistakes are made in diagnosis, due principally to negligence, and lack of a proper thorough examination.

A definite written clinical history should always be obtained.

Medicine has no place in treatment until after the diagnosis is made and the treatment decided upon.

Nature cries out with certain symptoms which call loudly for recognition; these should not be throttled with narcotics and opiates.

Patients should be taught the danger of the early operation vs. the expectant plan of treatment.

From the economic standpoint alone early operation is best, as it means only a few days of lost time, while

on the other hand repeated attacks not only are a menace to life but render one unfit to earn a livelihood.

The mortality is nil in the early operation, but is from 3 to 15 per cent. in delayed and neglected cases.

In 126 cases operated upon in 1912 by Dr. Angus McLean and the writer for acute and chronic appendicitis without pus there was no mortality.

In 52 cases of localized abscess there was a mortality of 2 or 3 per cent.

In thirty-five cases of general peritonitis there was a mortality of 5 or 14 per cent.; three of the cases died within six hours after operation and were not in condition for the slightest operative procedure.

Dr. Longyear opened the discussion. Many can remember the time when appendicitis was unknown. The patient used to live or die from peritonitis without knowing the cause. To operate with success and always with success it must be done before perforation has occurred and the abdomen is still clean. We must operate if possible within twelve hours. The severe infections of the appendix should not be overlooked as the symptoms are so characteristic. Very severe cases are much better operated in the home than after a long and tiresome journey to a distant hospital. A packing of the wound is just as efficient drainage as by the multiple stab wounds advocated by the essayist. The deep method of saline by rectum used in enormous quantities is also a life-saving device.

Dr. Judd said that the curling of the appendix is due to the shortness of the blood vessels. The appendix is obliterated in about 50 per cent. of the cases at autopsy. This is doubtless the reason why appendicitis is rarer as the patients grow older. The leucocytosis depends on the ability of the patient to react. In washing out the stomach, one should remember that the stomach normally contains 100 c.c. of fluid.

Dr. Simpson called attention to the fact that an infection of the appendix in a child is much more dangerous than in the adult as there is less chance of its being walled off.

Dr. Tibbals thinks any case of appendicitis is badly treated which is allowed to perforate. The family physician and the surgeon should work together from the start in the care of cases of appendicitis. It is not always so easy to make a positive diagnosis of appendicitis. Two members of this society are now threatened with suit because they failed to remove the appendix in a bad pus case of appendicitis.

Dr. Davis brought out some points in drainage. If drainage does not take place within twenty-four hours, it will not occur later. In quite a number of cases, suppression of urine occurs. Saline may not be retained, if the temperature of the solution is allowed to fall below 100° F. The patient will usually retain 10 pints of saline in twenty-four hours if properly given. The saline helps to keep up the blood-pressure. Drainage from the peritoneum may be more efficient through stab wounds.

Dr. Longyear called attention to the importance of displacements of the appendix in diagnosis of appendicitis. The appendix may drop down behind the uterus and cause a pelvic abscess which can sometimes be drained through the vagina.

Dr. Tyson has had the experience of passing through the appendicitis operation. Drainage is of great importance in these cases. When the saline solution gets cool the bowel will not retain it.

Dr. Carstens thinks these cases should be treated the same whether the woman is pregnant or not.



Cases of appendicitis after the delivery are sometimes confused with septicaemia. Appendicitis should be operated early and is not harder than during the intervals between attacks. The diagnosis is ordinarily easy. Every time you puncture the abdominal wall you open new channels for infection. We often try to do much. If the appendix can be easily found, it is removed. Otherwise the abscess is drained without breaking up the protective adhesions.

Dr. Meloy thinks foreign bodies are frequently found in these cases of severe infections. These are of etiological importance.

Dr. Blain finds that appendicitis probably kills more patients in Detroit hospitals than any other two surgical diseases. The physician on making the diagnosis of appendicitis, should place the patient in the upright position as the pus is much less dangerous in the pelvis than in the upper abdomen. Pain, with constipation in children, is suggestive of appendicitis. Many of these cases are doubtless unrecognized.

Dr. Hewitt thinks an anesthetic which keeps the bowels absolutely still, is the one of choice. Ether fulfills this requirement best. Some of the very sick patients can be done under local anesthetic.

Dr. Brooks closed the discussion. The appendix may become gangrenous within nine hours. The stomach tube is the most valuable feature in the treatment. The drainage tubes are removed from the stab wounds in twenty-four to thirty-six hours as they are useful for a short time. The operations should only last a few minutes.

The Wayne County Medical Society held its regular meeting April 7, with the chairman, E. W. Haass, in the chair; R. L. Clark, secretary.

Dr. Holmes introduced the following amendment to the By-Laws:

Add to Section 6.—Any active or associate member may be enrolled as a life member of his class upon the payment of three hundred dollars (\$300.00) and thereafter shall not be required to pay dues to this Society or to the Michigan State Medical Society.

Dr. Cooley moved that the Wayne County Medical Society approve the adoption of the Visiting Nurses' Association of a rule that the nurses of this organization instill a 2 per cent. solution of silver nitrate into the eyes of any new born babies which they are called upon to care for, unless ordered otherwise by the attending physician. Seconded. Carried.

The following resolution was introduced and carried: Be it

*Resolved*, That the Wayne County Medical Society, with a membership of over six hundred active members, being the largest County Society in the state, unanimously endorse and urge the appointment of Surgeon Wm. C. Braisted to the office of Surgeon General of the United States Navy. We respectfully request the Honorable Secretary of the Navy to favor his appointment and we assure him that the members of his profession of his native city and state have the fullest confidence in his qualifications to fill this high office with honor to himself, his native state and the nation.

Walter E. Welz read the paper of the evening on "A Study of the Induction and Acceleration of Labor Pains."

Experimental efforts indicate that the act of parturition is one of anaphylactic shock the effect of

which is centered in the uterine muscle. End products of proteid metabolism in the fetus enter maternal circulation during pregnancy just as placental cells do. These sensitize the maternal organism to the fetal proteid. Toward the termination of pregnancy large quantities of the proteid birth substances are transferred through the placenta from fetus to mother. The enzyme capable of splitting up these has been greatly increased during pregnancy. When the large quantities of birth substances enter maternal circulation, the enzymes capable of digesting them act on them, splitting them into forms which are toxic. The action of these is exerted almost entirely on the uterine musculature. The result is a characteristic series of clonic contractions which we call labor. Von der Heide, Rongy and Welz have caused commencement of labor in women at or near term by injecting large quantities of fetal serum into the maternal circulation.

The pituitary body hypertrophies during pregnancy and during the birth act discharges quantities of its secretion into the maternal circulation to aid uterine contractions. The birth substances act directly or indirectly as hormones in stimulating the secretion of pituitrin during the birth act. Injecting the extract during labor which has started, aids the act by stimulating normal clonic contractions. The use of the extract from lower animals is indicated where there is a deficiency of secretion in the individual. The extract was used in thirty cases in private practice to hasten termination of labor with no harmful results. The average duration of labor was considerably lessened in both primiparae and multiparae.

C. P. McCord gave a demonstration of the serodiagnosis of pregnancy.

## County Secretaries' Department

COUNTY secretaries will please review the membership roll of their society as published in this issue of THE JOURNAL and notify this office if there are any errors or omissions.

WE are very much pleased with the response that has met our request for county society reports. There are still some of the societies who have failed to respond, and THE JOURNAL has not had the privilege of hearing from them. To those who have sent in their reports we extend our thanks and trust that they will continue to send us something for publication for each issue. Those who have as yet failed in reporting their meetings we again urge that they make it a point to furnish us with their notes for our next issue. May we not hear from you?

Two of the county secretaries have remarked that they have difficulty in securing outside men to address their meetings. This office will be more than glad to assist any county secretary in

securing an invited guest for any given meeting. We hope to be able to perfect a speakers' bureau through the means of which county secretaries may be able to secure a speaker for any of their meetings and on any subject which they may indicate. In the meantime we shall be glad to assist any secretary to secure a visiting doctor to address their meetings.

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A COPY of The Bulletin of the American Medical Association will be regularly mailed to every county secretary who sends in his name to the secretary of the American Medical Association. This is a bimonthly publication that is devoted to the discussion of questions affecting organization and conduct of medical societies, especially county societies. Its pages furnish a medium of interchange of ideas and plans which have proven successful in building up and stimulating interest in the work of the county society. Do not fail to send in your name. The Bulletin will prove to be a valuable assistant and may be the means of solving the problems of your work.

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THE Council, at its January meeting, appropriated a fund for the entertainment of the county secretaries at a luncheon to be held in connection with the annual meeting of the County Secretaries Association on September 3. The purpose of this meeting and luncheon is to afford the county secretaries an opportunity of meeting in formal session for the discussion of the problems that confront every secretary of a county society, and also to determine on definite plans for the upbuilding of the various county organizations. As previously stated, in a former issue, the secretary of this Association is engaged in arranging a program for such a meeting. He is desirous at this time to hear from the county secretaries and learn their wishes as to the particular subjects which they would prefer to have brought up for discussion at this meeting. You are especially urged to communicate with Dr. C. T. Southworth of Monroe in this matter in order that he may not be delayed in arranging an interesting as well as a helpful program. The cooperation of all the secretaries is requested. Please try and write to Dr. Southworth this week.

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THE county society is the important unit in the field of medical organization. It is the door of entrance to the profession's organization. It is the sponsor and censor of the members com-

posing the organization. It is and should be a most active and influential body.

It is the privilege, the province and the duty of a county organization to become and remain active in three directions:

First, the securing as members all the reputable and licensed physicians residing in its particular county so that it may be a representative organization composed of men with common interests and the welfare of the profession at heart. This can only be accomplished by persistent effort directed toward enlightening the non-member as to what he is missing by not being affiliated and by endeavoring to point out to him that he owes it to his professional brothers as well as to himself to become a member of the organization in his county so that collectively they may carry on the work that falls to the lot of every county society.

Second, to hold stated meetings for the interchange of experience, the discussion and consideration of scientific and practical subjects pertaining to the daily work of the individual doctor; the consideration of the problems of public health in their immediate vicinity and for the promulgation of such work as will tend to advance their material interests.

Third, the directing of public opinions in all matters that pertain to the health of their community, and to public welfare.

The secretary of every county society will, in a great measure, determine the activity and influence of each county unit. It devolves on him to continuously strive to maintain a spirit of enthusiasm, interest and activity in his county society. To accomplish this he must be constantly active in arranging interesting as well as practical programs for each meeting. In order that a good attendance may be secured, he must send out a notice of each meeting and should as far as possible telephone individual members on the day of the meeting and urge them not to forget to come as well as to take part in the discussions that may take place. It is his to think, plan and talk society whenever he happens to be in a gathering of doctors. He can do this without becoming tiresome or annoying. He must do this if he wishes to instill enthusiasm in the individual member.

The secretary who makes an effort to add some pleasing change in the program of every meeting will be rewarded not only by having a good attendance at the meeting, but also by the appreciation which the members will express. He may accomplish this by following some of these suggestions: A series of clinical cases that are re-

ported by some member and the exhibition of some interesting thing connected with the case, as a pathological or microscopical specimen, a picture or an x-ray plate; the exhibition and demonstration of the use of some new instruments or appliances; a symposium dealing with some of the predominating diseases that are prevalent in their vicinity; the giving of a luncheon or a smoker in connection with the regular program; the securing of the presence of an invited guest who will take part in the meeting; the inviting of some lawyer or member of the clergy to address you on such subjects as may be of common interest, and the holding of a joint meeting with your neighboring county society. By so doing you will awaken a spirit of enthusiasm and cause your meetings to be looked forward to. It will also make the non-member eager to become affiliated.

### Public Health

Conducted by

ROBERT L. DIXON, M.D.

Secretary Michigan State Board of Health

#### OCCUPATIONAL DISEASES

Practically any movement or effort made for the purpose of increasing or conserving the efficiency of the so-called "laboring class" is usually received with interest and approval not only by the employers and employees, but by the general public, because it is conceded by all that whatever affects the wage-earner affects the people at large for better or for worse accordingly.

During past years, factory and other commercial industries have received no little attention by the legislative bodies, commissioners of labor, civic societies, health departments and other similar organizations. These attentions have not been exercised for any sentimental reasons, but always for the purpose of increasing or conserving the efficiency of the people immediately concerned and for the ultimate advantage to the public at large.

Factory and labor inspection in reference to dangerous and unhealthful occupations has been instituted but relatively recently as a factor of the scope of labor legislation and regulation. Factory and labor sanitation is a feature of almost present-day establishment. Labor organizations have been slow to adopt as important and as essential to their welfare, the establishment of

sanitary, health-producing and disease-preventing measures in relation to their work.

Emergency apparatus and first aid supplies have become a part of factory equipment more because of the fact that employers realized the importance of such protective means than because the ones liable to accident have demanded the same. It is doubtful if the present degree of sanitation in and about commercial industries can be attributed as much to the solicitation of the employees as to the judgment of the employers that such conditions are conducive to good service and increased production, and, therefore, constitute desirable equipment.

The evolution and development of safety devices have rendered the operation of formerly dangerous machinery practically safe. The value of this is, to say the least, as apparent to the manager as to the operator. While these conditions are primarily for the advantage of the laborer, their valuable effect is more far reaching.

In the industrial field it has been realized for some time that *occupational diseases* should be given more serious attention than obtains at the present. Many of us will say, without qualification, that the question of occupational or industrial disease should be carefully investigated and that conditions conducive to such diseases should be legislated against. We agree that health and labor departments of our cities and state should adopt regulations, within the authority allowed by the present law, to the end that occupation will not hazard the health and perhaps the life of the laborer. We agree that if these public departments have not sufficient authority under present statutes, their power should be increased sufficiently to render this important action possible.

This movement, as with any other proposition, regardless of how important a relatively few of us consider it to be, cannot go very far in advance of its apparent need and popular demand for the same. It is impracticable for the health or labor department of Michigan to take any definite action regarding the industrial diseases without slight evidence at least that this class of disease needs attention in this state.

With the probable purpose of obtaining such evidence, the legislature, in 1911, established the following law:

An Act to provide for the reporting of occupational diseases by physicians. (Act 119, P. A., 1911.)

The People of the State of Michigan enact:  
Section 1. Every physician attending or called upon to treat a patient whom he believes to be



suffering from poisoning from lead, phosphorus, arsenic or mercury, or their compounds, or from anthrax, or from compressed air illness, contracted as a result of the nature of the patient's employment, shall send to the state board of health, who shall transmit to the commissioner of labor, a notice stating the name, postoffice address and place of employment and the disease from which in the opinion of the physician, the patient is suffering.

Sec. 2. Any physician who shall fail to make any report required by the preceding section, or who shall wilfully make any false statement in such report, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not more than fifty dollars.

Sec. 3. It shall be the duty of the commissioner of labor and of the prosecuting attorney of the county where any one violating the provisions of this act which shall come to the knowledge of them or either of them to enforce this law.

The results of this law, if taken literally, would seem to indicate that there is no necessity for any special consideration of occupational diseases. Up to the present time there are on file in the state labor commissioner's office only five reports under the provisions of this statute. One physician reported three cases of caisson disease and another physician has reported two cases of lead poisoning.

Physicians are, as a class, law abiding, and it would be decidedly out of place to emphasize the importance of complying with Act 119, P. A., 1911, simply for the sake of avoiding the penalty which the law purposes to impose for non-compliance. There are other and more sufficient reasons why these cases should be reported, and it is hoped that these will appeal to the physicians more than heretofore. The men, women and children who are working under conditions liable to produce ill effects are entitled to any degree of protection which the state departments might be able to offer. The commercial industries are entitled to know the extent to which industrial diseases retard the productiveness of their industries and how unfavorable conditions can be remedied. The departments of health and labor are entitled to know somewhat, at least, the extent to which these diseases prevail, their distribution, which mines, factories, shops, etc., are furnishing unwarranted cases of caisson disease, lead poisoning, ammonia poisoning, chlorin poisoning, etc.

The commercial industries of Michigan are exceedingly numerous and diversified in character. There are many industries in which occu-

pational diseases are liable to be contracted. The great majority of these industrial diseases are preventable and therefore unwarranted.

The state departments of labor and health ask the cooperation of the physicians in making a study of occupational diseases in Michigan. The first step in this cooperation can only be the reporting by physicians of all such cases coming to their attention. Although special blanks for reporting cases of occupational disease have been prepared by the state health department, and many of them have been sent out, it is not necessary to report only on such blanks. A letter communication stating the facts of the case, as set forth in the above copy of the law, is sufficient. Blanks will be gladly furnished on request.

Bulletin No. 100, U. S. Bureau of Labor, contains very useful information regarding *industrial poisons*, and can be secured from the U. S. Department of Commerce and Labor for the asking.

It is hoped that many physicians of Michigan will immediately appreciate the importance of this proposition and report all cases of occupational disease as the law requires.

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### Book Notices

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SOLIDIFIED CARBON-DIOXIDE IN THE SUCCESSFUL TREATMENT OF CUTANEOUS NEOPLASMS AND OTHER SKIN DISEASE, with special reference to Angioma, Epithelioma and Lupus Erythematosus. By Ralph Bernstein, Philadelphia. 95 pages, cloth. Frank S. Betz Co., Hammond, Ind.

The author has presented the subject briefly and concisely, as is possible with the omission of histopathologic details. He has, in a practical way, given to the profession the results of his clinical experience in the treatment of the various cutaneous manifestations for which carbon-dioxide solidified has been found an amiable agent. It will prove to be an excellent working manual for the physician desirous of such a guide in the use of this therapeutic agent.

MEN, MANNERS AND MEDICINE by Medicus Peregrinus. Octavo, uncut edges, in heavy paper cover. W. M. Leonard, Publisher, 101 Tremont St., Boston, Mass. Price, postpaid, \$1.

The essays and sketches which make up this collection originally appeared from time to time in the columns of the *Boston Medical and Surgical Journal*. They represent the observation of a doctor, from his professional point of view, on men and books and other phenomena, especially in relation to medicine. The reader may not only be entertained but instructed, as he realizes how abundantly the doctor's life affords special opportunities for contact with larger interests outside the day's work. We have read it with pleasure and profit.

**SKIN GRAFTING.** For Surgeons and General Practitioners, by Leonard Freeman, B.S., M.A., M.D., Professor of Surgery in the Medical Department of the University of Colorado. Twenty-four illustrations. St. Louis, C. V. Mosby Company, 1912. Price, \$1.50.

All the reliable methods for skin grafting are explained in this little work, together with technique and cuts illustrating the different points. A neat, useful little book, containing about 125 pages of text.

**EPIDEMIC CEREBROSPINAL MENINGITIS.** By Abraham Sophian, M.D., formerly of the New York Research Laboratory. 272 pages, twenty-three illustrations. C. V. Mosby Co., St. Louis, Mo. Price, \$3.00.

The reader is presented, in this volume, the only monograph in English on this important disease. The volume is based on the author's studies in the Research Laboratory of New York and during the epidemic in Texas in 1912. The author has applied, in a systematic, connected order, many of the excellent observations which have been made by other observers. The scientific municipal control of epidemics, the observations of blood-pressure, the control administration of serum, prophylactic vaccination, the symptomatology, complications and treatment are well covered. The author has accomplished his purpose—to convey a thorough yet simple description of the clinical and laboratory findings and thereby familiarizes the reader with their application in the treatment of the disease. The work merits a cordial reception.

**THE CAREER OF DR. WEAVER.** A Novel. By Mrs. Henry W. Backus. Cloth, decorative, illustrated; 12mo, 373 pages. \$1.25 net; postpaid, \$1.40. Boston: L. C. Page & Co.

Like all good novels this is a love story abounding in real human interest and touching the high points of many problems pertaining to the medical profession. In the portrayal of the characters the author has shown herself abreast of the times and with the problems that confront the profession in its relation with the public as well as their relations with each other. The proprietary hospital, the public clinic, the commercial medical essay, the self-exploiting doctor and the vice of fee-splitting are justly considered. There is not a physician in this state who should fail to secure and read this book and then pass it along among his clientele.

**PROGRESSIVE MEDICINE.** Vol. 15, No. 1. A quarterly digest of advances, discoveries and improvements in the medical and surgical sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia. March 1, 1913. Paper binding, 359 pages. Lea & Febiger, Philadelphia and New York. \$6.00 per annum.

This is a work of such wide reputation as to need almost no reviewing. No member of the profession can well afford to be without it. It is a valuable brief of all that appeared during the previous three months in the leading publications of the world. It places the reader in the possession of all the latest advances, improvements and discoveries in the medical world and it enables him to become conversant with all that is good and is so complete that he can apply these principles in his daily practice. The contents of this num-

ber are devoted to Surgery of the Head, Neck and Thorax; Infectious Diseases, including acute rheumatism, croupous pneumonia and influenza; Diseases of Children; Rhinology and Laryngology; Otology. To keep abreast of his profession the practitioner cannot be without this work.

**A LABORATORY HANDBOOK FOR DIETETICS.** By Mary Swartz Rose, Ph.D., Assistant Professor, Department of Nutrition, Teachers' College, Columbia University. New York and London: The MacMillan Co., 1912. Price, \$1.10 net.

This book does not tell the kind of diet to prescribe in a given disease or condition. It does tell how to find the exact amount of protein, fat and carbohydrate in the diet you wish to prescribe; also how to determine the quantity, variety and kind of food articles necessary to supply the exact amount of protein, fat and carbohydrate required for any individual case. It goes farther—by means of principles, rules and tables, well indexed, it points an easy way to find the amount or percentage of protein, fat or carbohydrate in a gram, ounce or pound of any of the many food articles in common use by civilized man. It is exactly what the author claims, "A Laboratory Manual of Dietetics." It is also a quick reference for the busy practitioner.

**A MANUAL OF AUSCULTATION AND PERCUSSION.** Embracing the Physical Diagnosis of Diseases of the Lungs and Heart, and of Thoracic Aneurysm, and of other parts. By Austin Flint, M.D., LL.D., Late Professor of Medicine and of Clinical Medicine in the Bellevue Hospital Medical College, etc., New York. Revised by Haven Emerson, A.M., M.D., Associate in Physiology and in Medicine, College of Physicians and Surgeons, Columbia University, New York. 12mo, 361 pages, illustrated. Cloth, \$2.00 net. Lea & Febiger, Philadelphia and New York, 1912.

To all those familiar with Flint's Physical Diagnosis (and that comprises practically all the profession, for it is the standard from which all Physical Diagnosis is built) nothing need be said of the sixth edition, except that two chapters dealing with the abdominal viscera and nervous system have been added. To all those students or practitioners still unfamiliar with Flint's work, if any there be, let us say that the English language contains no work that sets forth the principles, methods, limitations and conclusions of Physical Diagnosis more clearly than does this sixth edition of Flint's work.

**KEEN'S SURGERY, Volume VI: The Volume with the Newest Surgery.** By eighty-one eminent surgeons. Edited by W. W. Keen, M.D., LL.D., Hon. F. R. C. S. (Eng. and Edin.), Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Octavo of 1,177 pages, with 519 illustrations, 22 in colors. Philadelphia and London: W. B. Saunders Company, 1913. Entire work, consisting of six volumes, per volume: Cloth, \$7.00, net; half morocco, \$8.00, net.

The five volumes originally contemplated in this system of surgery were published between 1906-1909. The time elapsed since the first volume was issued is not very long, yet the progress of surgery in so many departments has been so rapid that some of the early matter is obsolete. To bring the system "up to date,"

it has been necessary for the authors to bring their chapters fully abreast with the present status of surgery. This has been accomplished in this volume and it is rightly termed, "The volume with the newest surgery." Anoci-Association; a full description of the apparatus for operating on the thorax; intratracheal anesthesia, as well as other considerations of the method of producing anesthesia; the surgery of the hypophysis; the treatment of cancer by fulguration, desiccation, etc.; thoracic surgery; the use of iodine in surgery have all been fully discussed and places the owner of this volume in possession of details and facts connected with the recent developments attained in these special fields. This volume deserves careful reading and study and should become exceedingly popular.

**INTERNATIONAL CLINICS.** A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other topics of interest to students and practitioners by leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M., M.D., Philadelphia. Vol. 1, twenty-third series, 1913. J. B. Lippincott & Company, Philadelphia and London. 299 pages; numerous illustrations. Cloth. Price, \$2 per volume.

A work that has made its regular appearance for twenty-three series scarcely needs other review than to consider the contents of this particular volume. The value of the series has been established; it has a definite purpose; its favorable reception is assured; the continuance of the series is desired.

This first volume of the twenty-third series is of exceptional interest and value by reason of its containing a concise, accurate and instructive review of the progress of medicine and its branches during the year 1912. Foremost among the articles, contributed and selected, that are published in this book, the reviewer has been especially impressed by those on Poliomyelitis, A Diagnostic Sign in Chronic Appendicitis, Retarded Mental Development, the Care of the Woman During Her Thirty-nine Weeks of Gestation, Report of Ten Cases Operated on for Pott's Disease of the Spine by Albee's Method of Bone Grafting.

To repeat, as a whole the volume is lucid and concise in the treatment of its subjects and amply illustrated. It should merit much favor and a continuance of its popularity.

**NERVOUS AND MENTAL DISEASES. FOR STUDENTS AND PRACTITIONERS.** By Charles S. Potts, M.D., Professor of Neurology in the Medico-Chirurgical College of Philadelphia. New (third) edition, enlarged and thoroughly revised. In one 12mo volume of 610 pages, with 141 engravings and 6 full-page plates. Price cloth, \$2.75 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

Diseases of the mind and nervous system are among the most intricate and difficult of comprehension of all subjects in medicine, and yet the general practitioner, who probably has not devoted special study to this department, is almost invariably the one who first meets these cases and refers them to the alienist. A medium-sized work, short, clear, and to the point is

therefore a great desideratum, and this has been shown in the demand which has brought Professor Potts' book to its third edition. In this new revision the chapter on general symptomatology and methods of examination has been amplified. A description of tic embodying the present-day view of that disorder, and short descriptions of myotonia atrophica, pregressive lenticular degeneration and dysbasia lordotica deformans have been added. The importance of the examination of the cerebrospinal fluid and determination of the existence of the Wassermann reaction in the diagnosis of certain diseases of the nervous system has been realized and the latest views incorporated. In brief, the work includes the most recent advances. It is extremely well illustrated; and a better book for the purpose of the general practitioner or for the college student would be hard to find.

## ***New and Nonofficial Remedies***

Since the publication of New and Nonofficial Remedies, 1912, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

**POLYVALENT ACNE VACCIN.**—Marketed in packages of six ampoules. Sophian-Hall-Alexander Biologic Laboratories, Kansas City, Mo. (*Jour. A. M. A.*, April 5, 1913, p. 1074).

**ANTIMENINGITIS SERUM.**—A polyvalent serum prepared from the blood of horses immunized to the meningococcus of Weichselbaum. Sophian-Hall-Alexander Biologic Laboratories, Kansas City Mo. (*Jour. A. M. A.*, April 5, 1913, p. 1074).

**POLYVALENT B. COLI-COMMUNIS VACCIN.**—Marketed in packages of six ampoules. Sophian-Hall-Alexander Biologic Laboratories, Kansas City, Mo. (*Jour. A. M. A.*, April 5, 1913, p. 1074).

**REFINED AND CONCENTRATED DIPHTHERIA ANTITOXIN (ANTIDIPHTHERIC GLOBULIN).**—Put up in a syringe container. Sophian-Hall-Alexander Biologic Laboratories, Kansas City, Mo. (*Jour. A. M. A.*, April 5, 1913, p. 1074).

**POLYVALENT GONOCOCCUS VACCIN.**—Marketed in packages of six ampoules. Sophian-Hall-Alexander Biologic Laboratories, Kansas City, Mo. (*Jour. A. M. A.*, April 5, 1913, p. 1074).

**POLYVALENT MENINGOCOCCUS VACCIN.**—Marketed in packages of three ampoules. Sophian-Hall-Alexander Biologic Laboratories, Kansas City, Mo. (*Journal A. M. A.*, April 5, 1913, p. 1074).

**POLYVALENT PNEUMOCOCCUS VACCIN.**—Marketed in packages of six ampoules. Sophian-Hall-Alexander Biologic Laboratories, Kansas City, Mo. (*Jour. A. M. A.*, April 5, 1913, p. 1074).

**POLYVALENT PYOCYANEUS VACCIN.**—Marketed in packages of six ampoules. Sophian-Hall-Alexander Biologic Laboratories, Kansas City, Mo. (*Jour. A. M. A.*, April 5, 1913, p. 1074).



**POLYVALENT STAPHYLOCOCCUS VACCIN.**—Marketed in packages of six ampoules. Sophian-Hall-Alexander Biologic Laboratories, Kansas City, Mo. (*Jour. A. M. A.*, April 5, 1913, p. 1074).

**POLYVALENT STAPHYLO-ACNE VACCIN.**—Marketed in packages of six ampoules. Sophian-Hall-Alexander Biologic Laboratories, Kansas City, Mo. (*Jour. A. M. A.*, April 5, 1913, p. 1074).

**POLYVALENT STREPTOCOCCUS VACCIN.**—Marketed in packages of six ampoules. Sophian-Hall-Alexander Biologic Laboratories, Kansas City, Mo. (*Jour. A. M. A.*, April 5, 1913, p. 1074).

**POLYVALENT TYPHOID VACCIN.**—Marketed in packages of three ampoules. Sophian-Hall-Alexander Biologic Laboratories, Kansas City, Mo. (*Jour. A. M. A.*, April 5, 1913, p. 1074).

**ANTIRABIC VACCINE.**—The Antirabic Vaccine, formerly manufactured by the American Biologic Company, Kansas City Mo. (See New and Nonofficial Remedies, 1913), is now manufactured by the Sophian-Hall-Alexander Biologic Laboratories, Kansas City, Mo. (*Jour. A. M. A.*, April 5, 1913, p. 1074).

## **The Truth About Medicines**

It is the purpose of this department to encourage honesty in medicines, to expose frauds and to promote rational therapeutics. It will present information regarding the composition, quality and value of medications, particularly as this is brought out in the reports of the Council on Pharmacy and Chemistry and of the Chemical Laboratory of the American Medical Association.

**LLOYD'S SPECIFIC MEDICINES.**—While some of the products of Lloyd Bros. appear to be proprietary medicines of secret composition, in the main they are the so-called "specific medicines" or "specific tinctures." In general, it is understood that these preparations belong to that class of obsolete pharmaceuticals known as "green tinctures," which at one time were believed to possess great virtues because they were made from the fresh, undried drug. The use of so-called "green tinctures" has been a fad and has never been put on a scientific basis. In an examination of digitalis preparations by Edmunds and Hale, Lloyd's "Specific Medicine, Digitalis" was found to be one of the weakest of all the various preparations examined, although it was claimed to be twice as active as ordinary fluid-extracts. (*Jour. A. M. A.*, March 15, 1913, p. 848.)

**IOSALINE.**—Iosaline is advertised as a remedy for the treatment, by external application, of rheumatism, gout, neuralgia, pneumonia and numerous other diseases. The following claims are made: "Iosaline is a penetrator and overcomes the objectionable escharotic properties of Iodine; it is readily absorbed and may be used without discomfort or discoloration." As there are few iodine compounds which are "readily absorbed" through the skin and which will not at the same time

produce discoloration or discomfort, the product was examined in the A. M. A. Chemical Laboratory. The examination indicated the composition to be, approximately: Alcohol (by weight) 48.05 per cent., Menthol 2.07 per cent., Methyl salicylate 10.25 per cent., Potassium iodid 5.55 per cent., Soap 12.68 per cent., Glycerin a trace, water and undetermined matter to make 100.00 per cent. Physiologic tests showed that the iodine was not absorbed by the skin. The laboratory findings having been reported to the Council on Pharmacy and Chemistry, this body voted that, because of the unwarranted and misleading claims, Iosaline be refused recognition. (*Jour. A. M. A.*, March 15, 1913, p. 848.)

**GLUTEN FLOUR.**—There exists in the mind of the public and even of many physicians the dangerous misconception that so-called "gluten flours" or "diabetic foods" are essentially free from starch. This danger has been increased by the Food and Drugs Act for, while there is a natural belief that the law should protect the public, the government standard for gluten flour makes no requirement regarding the starch content, which is the item of importance from the standpoint of the diabetic. The government regulations merely prescribe that it shall contain at least 35 per cent. protein. The great majority of so-called gluten flours and gluten foods sold in this country contain dangerously high percentages of carbohydrates. The manufacturers do their best to keep both physician and patient in ignorance of this fact. Accepting the exploiters' own figures—given grudgingly—the preparations on the American market contain the following amounts of carbohydrates: Brusson Gluten Bread 49.77 per cent., Farwell & Rhines' Gluten Flour 46.05 per cent., Heintz Gluten (Glutin) Biscuit 51.64 per cent., Jireh Diabetic Biscuit 64.52 per cent., Jireh Flour 58.59 per cent., Jireh Bread 39.12 per cent., Bond Gluten Diabetic Flour 50 per cent., Pieser-Livingston Gluten Flour 44.30 per cent., Hoyt's Gum Gluten products 40.63 per cent. to 48.20 per cent. and Wilson Bros.' Gluten Flour 64.10 per cent. (*Jour. A. M. A.*, March 22, 1913, p. 922.)

**THE DEADLY BICHLORID TABLET.**—In this country many accidental deaths are caused by the indiscriminate use of mercuric chlorid tablets. The German Pharmacopeia requires that mercuric chlorid pastilles be colored bright red, have a cylindrical shape, be twice as long as thick, be dispensed in glass containers and be labeled "poison." Further, each tablet must be wrapped in black paper which must bear, in white letters, the word "poison" and a statement of the weight of mercuric chlorid. Finally it is specified that they be kept under lock and key. The protection thus given the people of Germany shows the advantages of a "government-owned" pharmacopeia over such as ours which are dominated by commercial interests. (*Jour. A. M. A.*, April 5, 1913, p. 1083.)

**MANOLA.**—Manola is an alcoholic nostrum with just enough more or less inert medicinal products added to exempt it from the internal revenue tax, but not enough to prevent it being used as a tippie. It is prepared by the Luyties Pharmacy Company of St. Louis, a homeopathic concern. Since the promoters

realize, doubtless, that to put this stuff out under a homeopathic label might not be conducive to stimulating physicians' confidence, Manola is labeled: "Prepared only by the Manola Company, St. Louis." Manola is exploited by means of a scheme which consists in offering the physician three bottles of Manola free on condition that he get his druggist to purchase a dozen bottles. If the scheme "works" the druggist has his shelves loaded up with a dozen bottles of Manola, while the doctor gets three bottles for nothing and, incidentally, he also gets the contempt of his druggist—and of such patients as learn of it. (*Jour. A. M. A.*, April 5, 1913, p. 1092.)

**THE GATLIN INSTITUTE.**—The Gatlin Institute is one of the many "three-day liquor cures" with which the country is at present afflicted. Judging from a specimen sent in, ipecac seems to be an important part of the "treatment," for which the evidently false claim is made that "by this method failure to cure is impossible." There appears to be a close connection between the "Gatlin Institute" and the "Neal Three-Day Liquor Cure" operated from the Chicago Hospital and which has one Joseph De Barthe connected with it. De Barthe at one time exploited a "rheumatism cure." At the present time De Barthe seems to be pushing "Kinpo" which is guaranteed to "sober you up immediately." (*Jour. A. M. A.*, April 5, 1913, p. 1092.)

**THE TOXICITY OF SALICYLATES.**—P. J. Hanzlik has studied the records of a hospital to determine the relative toxicity of the various salicylic compounds. Given in doses of from ten to twenty grains every hour until symptoms of intoxication appear, it was found that the mean toxic doses for males and females, respectively, are: 180 and 140 grains of synthetic sodium salicylate, 200 and 135 grains of natural sodium salicylate, 120 and 120 minims of oil of gaultheria (methyl salicylate), 165 and 120 grains of acetylsalicylic acid (aspirin) and 100 and 83 grains of salicylosalicylic acid (Diplosal). While, based on the salicyl content, the efficiency of Diplosal is about twice that of oil of gaultheria and aspirin one and two-thirds that of sodium salicylate, the toxic dose of Diplosal is one-half and that of oil of wintergreen and aspirin in six-tenths that of sodium salicylate. The investigation shows that there is no difference between the toxicity of the synthetic and natural sodium salicylates. (*Jour. A. M. A.*, March 29, 1913, p. 957.)

**RATTLESNAKE-VENOM (CROTALIN).**—An epileptic in Texas was bitten by a rattlesnake. He escaped the secondary infection which so often complicates and adds to the fatalities by poisonous vipers and his epileptic attacks ceased. Dr. Ralph H. Spangler having had some familiarity in using crotalin in the treatment of pulmonary tuberculosis, attempted to reproduce the favorable issue of the epileptic's accident. That any measure of success sufficient to justify the adoption of crotalin treatment for epilepsy has accrued to his efforts is not to be concluded from the available reports. There are a number of good and sufficient reasons why cautious physicians should shun the administration of this treatment and advise against it. (*Jour. A. M. A.*, March 29, 1913, p. 1001.)

**DIXON'S TUBERCULIN.**—According to Dixon a peculiar branched form of the tubercle bacillus develops when the bacillus is grown at an elevated temperature. Grown under these circumstances the tubercle bacilli may become non-acid-fast, which is ascribed to loss of the waxy envelope. According to Dixon experiments on guinea-pigs show that the branching, non-acid-fast forms are less virulent than the original cultures from which they are produced and that they induce the development of marked resistance to lethal doses of virulent tubercle bacilli. Dixon has developed tuberculins for practical purposes consisting on the one hand of watery extracts of tubercle bacilli and on the other of suspensions of "degreased bacilli," the theory being that in this way are obtained antigens of little toxicity, but of good antigenic virtue. (*Jour. A. M. A.*, March 29, 1913, pp. 993 and 1002.)

**CONCENTRATED PLUTO WATER.**—The claims made for Pluto Water of the French Lick Springs, Indiana, are rivalled only by those made for such patent medicines as Peruna, Duffy's Malt Whiskey or Lydia Pinkham's Compound. The essential constituents of the water are said to be the sulphates of sodium, magnesium and calcium, chlorid of sodium and the carbonate of magnesium. It is, however, only the so-called "concentrated" Pluto Water that is found on the market. The impression is given in all of the advertising matter that the "concentrated" Pluto Water is "natural" Pluto Water concentrated to ten times its "natural" strength. From a comparison of the composition of the "natural" Pluto Water with that of "concentrated" Pluto Water as given out by the promoters shows that the latter has more than eighty times as much sodium sulphate and nearly one hundred times as much magnesium sulphate as is found in the "natural" water. This shows that "concentrated" Pluto Water bears little relation to the "natural" Pluto and that it is essentially a solution of Epsom salt and Glauber's salt. The only indication given on the label of the fact that it is not the "natural" Pluto Water boiled down, is the statement, in small type: "Fortified with some of the natural products of the water." (*Jour. A. M. A.*, March 29, 1913, p. 1013.)

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(Signature of editor, publisher, business manager or owner) Sworn to and subscribed before me this 14th day of March, 1913.

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